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FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED CENTRAL MONTANA 100-KV TRANSMISSION PROJECT

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Final environmental impact statement for



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**FINAL ENVIRONMENTAL
IMPACT STATEMENT
FOR THE PROPOSED
CENTRAL MONTANA
100-KV TRANSMISSION
PROJECT**

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EXECUTIVE SUMMARY

DNRC received six letters with comments or questions regarding the draft EIS. Five of these were from landowners along the suggested routes and one was from MPC. Further comment was accepted from landowners and other interested persons at a public meeting DNRC held at Moore on December 5, 1984.

The comments indicate that need for the line was not an issue, but there was no consensus regarding the best location. Landowners generally wanted the line located away from them, and continued strong in their support of the Railroad Route. MPC maintained support for its preferred Foothills Route, but was willing to accept modifications to accommodate landowners.

The main issues raised in the comments were weed control, radio and television interference, highway safety, and land-use impacts.

The issue of weed control did not weigh conclusively in favor of any route.

Radio and television interference was not considered a significant issue because of the few houses affected and the availability of means to mitigate any problems.

After reviewing accident information for the highway along the portion of the Railroad Route, DNRC concluded that the potential traffic danger was not sufficient to preclude location of the line there. DNRC concern over highway safety in the draft EIS was disputed by residents of the area who believed that the line would be far enough from the road to avoid any dangers.

Hindrance to agriculture is the most important potential impact of the line. DNRC analysis indicates that the Crossover Route causes the least interference with agriculture while maintaining an acceptable level of public safety and convenience through use of railroad and county road right-of-way.

DNRC favors the Crossover Route because it has the least cumulative environmental impact and economic cost, given the alternatives. Nevertheless, DNRC recognizes that a change in how impacts are valued could make either the Railroad Route or Foothills Route appear superior to the Crossover Route. Relocation of the line to accommodate landowners in the Foothills Route might easily drive the cost above either the Crossover or Railroad routes. If greater weight were given to concerns about scenic deterioration along the Crossover and Railroad routes, then the Foothills Route could be found superior. If use of existing corridors is given greater weight, the Railroad Route could be chosen.

The Major Facility Siting Act (MFSA) rules adopted by the Board of Natural Resources and Conservation (Board) in December, 1984, require that certain conditions be met when a transmission line is to be built. MPC's proposed project would meet the Board's standards for noise and electric fields, and would be constructed according to the National Electric Safety Code. The project could have some effect on communication systems but most impacts can be avoided or remedied.

The Department of Health and Environmental Sciences (DHES) has determined that this project is in substantive compliance with air quality, water quality, and solid waste statutes which it administers.

Undergrounding is not considered an economically viable alternative to reduce impact for this project.

Based on the findings of the final EIS, DNRC recommends:

- 1) MPC should be permitted to build a new 230/100-kV substation near Judith Gap to tap the 230-kV system, and to build a new 100-kV transmission line between this substation and the existing Glengarry substation.
- 2) Construction of the new Judith Gap substation should be allowed to begin after the Board approves a route for the project but before final centerline approval is received by MPC. This action would help raise voltage levels on the existing transmission system as quickly as possible.
- 3) The Crossover Route should be approved by the Board.
- 4) The Board should adopt different widths for various portions of this route. The route selected by the Board should be delineated by DNRC on USGS quadrangle maps as specified in the MFSA rules and attached to the Board order. The general location of this route and recommended widths of the various segments is contained in Chapter Five and Appendix C.
- 5) The Board should certify the project on the condition that MPC and DNRC conduct a centerline analysis for the approved route and that final centerline approval remain with the Board.
- 6) The Standard Environmental Specifications for Transmission Lines 100-kV and Above should be adopted to mitigate potential environmental impacts, including radio and television interference, cultural resource impacts, visual impacts, construction-related disturbance, and the spread of weeds. The final language for the specifications proposed in the draft EIS should be developed jointly by MPC and DNRC and submitted for Board approval at the time of route approval.
- 7) MPC and DNRC should develop a monitoring program to be submitted for Board consideration at the time of centerline approval.

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CHAPTER ONE INTRODUCTION

In November, 1984, the Department of Natural Resources and Conservation (DNRC) released its draft environmental impact statement (EIS) on the Montana Power Company (MPC) proposed 100-kV transmission line project from Judith Gap to a substation near Glengarry. This final EIS summarizes and updates the draft, contains a chapter consisting of comments and questions pertaining to the draft EIS and DNRC's response to these, and a final chapter of DNRC's conclusions and recommendations to the Board of Natural Resources and Conservation (Board). A 30-day comment period followed issuance of the draft EIS and ended on December 7, 1984. DNRC held a public meeting in Moore on December 5, 1984, to gather comments. DNRC used the comments in preparing this final EIS. Most are responded to directly in Chapter Four. The remainder are addressed in Chapter Three.

DNRC received six letters commenting on the draft: one from MPC and five from landowners along possible routes for the project. Twenty-one people, including landowners and other interested persons, attended the December 5, 1984, public meeting in Moore. About half of those attending presented oral comments. Need for this project was not questioned by DNRC or the public. However, comments show that there is not a consensus as to the best route. Important public concerns noted in evaluating the line include weed control, radio and television interference, and possible land-use impacts.

The Montana Major Facility Siting Act (MFSA) requires the appointment of a hearings officer and setting of a hearing date by the Board after release of this final EIS. The Board will hear testimony and will use the hearing record to determine the following: (1) the basis of need for the facility; (2) the nature of the probable environmental impact; (3) that the facility represents the minimum adverse environmental impact considering the state of available technology and the nature and economics of the various alternatives; (4) the applicable criteria set forth in section 75-20-503, MCA; (5) what part, if any, of the line should be located underground; (6) that the facility is consistent with regional plans for expansion of the interconnected grid; (7) that the facility will serve the interests of the utility system economy and reliability; (8) that the location of the facility conforms to applicable state and local laws; (9) that the facility will serve the public interest, convenience, and necessity; (10) that the Montana Department of Health and Environmental Sciences has issued any permits required within its jurisdiction; and (11) that the use of public lands for location of the facility was evaluated and public lands were selected whenever their use is economically practical as the use of private lands and compatible with the environmental criteria in MFSA.

After the hearing, the Board will either approve or disapprove the project, and if approved, describe what conditions should be attached. If the Board determines that the project meets the requirements of MFSA, it will issue a Certificate of Environmental Compatibility and Public Need.

When it issues a certificate, the Board will designate a route width within which the line must be constructed. Leaving the route wide allows MPC maximum flexibility in placing structures where they will be the least harmful or inconvenient for landowners and the public but also leaves landowners with less

certainity about the final location of the line. DNRC recommends a variable width route in Chapter Five and Appendix C of this report. Selection of the line's final location within the route is referred to as "centerline study," which MPC does, with assistance from DNRC and affected landowners, land managers, and public agencies, after a certificate has been issued. If the Board desires, it may require that the centerline be submitted for its approval before construction begins.

DNRC oversees construction to ensure that environmental impacts are kept to a minimum as specified in the conditions the Board attaches to the certificate. After construction, DNRC monitors reseeding and other efforts to alleviate impacts of the line, as specified by the Board.

CHAPTER TWO
SUMMARY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

The information in this chapter pertains to the draft EIS published in November, 1984.

The draft EIS addressed the social, economic, and environmental effects of an approximately 32-mile-long 100 kilovolt (kV) transmission line that MPC has proposed to build from a point near Judith Gap to the Glengarry Substation 5 miles west of Lewistown. The need for the project and possible alternatives to it also were discussed. The project includes a new substation that would be built about 2 miles west of Judith Gap to tap power from MPC's Broadview-to-Great Falls 230-kV line.

NEED AND ALTERNATIVES

The project is needed to serve two functions: to reinforce voltages in the Lewistown area and to improve system reliability. MPC's reliability planning criteria require that the transmission system be able to adequately serve loads even under the "worst single case outage," which generally is defined as the conditions that would result from the accidental loss of the biggest transmission line or other key facility serving an area.

MPC and DNRC evaluated the impacts of the proposal and considered several options for serving the power needs. The analysis indicated that potential for conservation was not sufficient to offset the need for the line. Similarly, gas combustion turbines, while able to supply necessary power levels, could not adequately address outages of less than 30 minutes, because of the cost and time it would take to bring the turbines into operation when an outage occurs. Several ways of bringing power into the area over a new 100-kV line were evaluated, but DNRC's analysis supported MPC's conclusion that a tap on the Broadview-to-Great Falls 230-kV line near Judith Gap and a new 100-kV transmission line from the tap point to the existing Glengarry substation offered the best solution. However, DNRC differed with MPC regarding the best route for this line, as discussed below. Various routes considered are shown in Figure 1.

IMPACTS AND PUBLIC CONCERNs

The proposed project does not pose a significant risk of adverse impact to the environment and people of central Montana. There is concern about the possibility of soil erosion, but choice of an appropriate route would keep this potential low, and the implementation of carefully selected measures to counter the problem should be sufficient to avoid any serious impact. If such measures were required by the Board, DNRC would monitor their implementation and effectiveness. Possible land-use impacts caused the most concern to area residents, as expressed in meetings and personal interviews with DNRC.

A major portion of DNRC's evaluation process consisted of informing the public and gathering public opinion regarding the proposed project. Public meetings were held in Moore on March 8 and July 2, 1984. DNRC used the information gathered at these meetings when it evaluated the proposed line. The main point brought up by the public was the possibility of avoiding impacts by using the abandoned Milwaukee Road right-of-way and Burlington Northern Railroad right-of-way for the transmission



FIGURE 1
LINE LOCATION OPTIONS*

line. Evaluation of this possibility showed it to have several disadvantages, including possible conflicts with the Moore airstrip and highway safety hazards, which made it unsatisfactory as a possible route. As suggested by the public, DNRC considered the possibility of placing the line on the same set of poles as one of the existing lines that now serves the area. The cost of this option and possible problems siting the line with minimal land-use conflict removed it from consideration.

DNRC preferred the Crossover Route on the basis of public opinion, environmental concerns, and opportunities to locate the line at a reasonable cost. The major problem found with this route related to the existing weed growth on the abandoned railroad right-of-way. Construction of the line through weed-infested areas could result in the spread of weeds unless special effort, possibly resulting in additional costs, were made to control them. The unresolved issue of who legally owns the Milwaukee right-of-way left it uncertain who would be responsible for the weed problem if this route were used. The cost of weed control, requirements for MPC to participate in this cost, and the effect of these costs on a final siting decision were not fully known when the draft EIS was released. DNRC suggested investigation of the weed issue itself and the potential for cooperative weed control among MPC, adjacent landowners, and the county weed control board. The results of this investigation are included in Chapter Three.

DNRC concluded that the Crossover Route would have fewer cumulative environmental impacts than MPC's preferred route, called the Foothills Route (see Figure 1). The Foothills Route would require considerably more construction on sidehills where access roads and the line would cross steep slopes.

DHES reviewed the project and determined that the substantive requirements of air and water quality and garbage disposal statutes can be met.

DRAFT EIS RECOMMENDATIONS

DNRC made the following preliminary recommendations in the draft EIS.

1. DNRC recommended that a new substation be built near Judith Gap to tap the 230-kV system, and that a new 100-kV transmission line be built between this substation and the existing Glengarry substation.
2. DNRC further recommended that construction of the new substation should begin after the Board approves a route but before it approves a final centerline. This action would help raise voltage levels on the existing transmission system as quickly as possible.
3. DNRC recommended the Crossover Route as the preferred route.
4. DNRC recommended adoption of the following measures to prevent impact along the route approved by the Board.

A. Selection of a Centerline and Monitoring

After a route is selected, DNRC proposed to assist in determining the exact location of the line to avoid specific impacts. Further, DNRC would develop a detailed set of environmental specifications identifying mitigation measures to be taken. This effort would culminate in DNRC's monitoring of construction and reclamation to ensure that environmental specifications are followed.

B. Adoption of DNRC Standard Environmental Specifications

DNRC recommended adoption of an amended version of the Standard Environmental Specifications for Transmission Lines 100-kV and Above in Appendix B of the draft EIS to reduce construction impacts and aid in reclamation.

C. Measures to Reduce Visual Impacts

DNRC recommended use of natural colored wood pole structures and dark brown insulators along the entire length of the route selected.

D. Measures to Reduce Radio and Television Interference

MPC proposed installation of remote antennas, repeater stations, more sensitive radio receivers, or mechanical corrections to homeowners' antennas if problems were found. DNRC supported this measure.

E. Measures to Reduce Historical, Archaeological, and Paleontological Impacts

Several measures were recommended by DNRC to protect cultural resources once a route is approved, but before Board approval of the centerline. These include: a schedule developed in consultation with State Historical Preservation Officer which provides for establishment of survey methods and procedures to identify sites, to evaluate their significance and likely impact, to recommend measures to reduce potential impacts, and to implement identified measures; and a plan for impact assessment and mitigation.

CHAPTER THREE PROJECT UPDATE

This chapter presents information gathered since publication of the draft EIS. Discussion in the draft EIS has been expanded in this chapter because of comments received on the draft. This chapter contains discussion of methods DNRC used in evaluating potential land-use and social impacts of the various routes, options for weed control along portions of railroad right-of-way that might be used for the transmission line, information on safety issues relating to highways, and discussion of the costs and impacts of placing the new line and an existing line on a single set of poles along the Railroad Route.

Much of the material in this chapter responds to comments on the reasons DNRC recommended a different route than MPC.

DNRC EVALUATION OF LAND USE AND SOCIAL IMPACT

Part of the reason DNRC recommended a route other than the one chosen by MPC is that DNRC gave greater weight to the potential for reducing land-use impacts by use of the railroad and county road right-of-way. Also, DNRC attempted to accommodate public opinion as to where the line should go.

At its March 8, 1984, public meeting in Moore, INRC encountered strong local opposition to the Foothills Route when it was identified as the MPC preferred route. Potentially affected landowners cited instances where the preferred route would cut diagonally across mechanically irrigated hay fields and several dry cropland areas. Concern over the spread of weeds along the Foothills Route was another issue raised by landowners, but not addressed in MPC's application. Local residents complained that most had not heard of the project before the DNRC meeting.

Several landowners at this public meeting suggested locating the transmission line on the abandoned Milwaukee Road and Burlington Northern Railroad right-of-way. The right-of-way was cited as being mostly unusable for farming, and having little potential for conflict with agricultural operations. A variation of such a route was MPC's second choice.

Given the strong negative reaction to MPC's preferred route and local support for a route along railroad right-of-way, DNRC began a detailed land-use analysis.

Advantages and disadvantages of routing alternatives were evaluated through fieldwork. INRC conducted interviews with landowners, local government officials, and MPC personnel in efforts to refine MPC data and analyze impacts.

MPC's analysis of the Crossover Route treated the 20-mile segment of railroad right-of-way as dry cropland, resulting in a prediction of major interference with farming operations. DNRC's analysis of this same segment assumed the transmission line would be located within the right-of-way, crossing less than .5 mile of cropland, and having low impacts to agriculture. Other differences among routes were identified, such as several areas on the Foothills Route where cropping patterns would make land-use impacts difficult to avoid.

Table 1
Land-Use Categories Crossed by the Various Routes

	<u>FOOTHILLS</u>	<u>MODIFIED FOOTHILLS</u>	<u>CROSSOVER</u>	<u>RAILROAD</u>
<u>MECHANICALLY IRRIGATED LAND</u>				
Miles diagonally crossed	0.1	-0-	-0-	-0-
<u>DRY CROPLAND</u>				
Miles diagonally crossed	3.9	2.6	1.6	1.0
Miles crossed parallel to cropping patterns	0.1	0.1	0.3	2.0
Miles crossed along fence-line or property boundaries	2.8	5.1	1.5	0.7
Miles crossed along road right-of-way	1.2	-0-	8.8	8.6
<u>MEADOWLAND (naturally wet land)</u>				
Miles crossed diagonally	1.0	1.0	0.3	0.3
Miles crossed along fenceline or property boundary	0.3	0.2	-0-	-0-
Miles crossed along road right-of-way	-0-	0.1	0.1	-0-
<u>RANGELAND</u>				
Miles crossed	19.9	22.3	5.7	1.0
Miles crossed along fence or property lines	2.2	1.8	0.3	-0-
<u>OTHER</u>				
Miles crossed along Milwaukee railroad right-of-way	1.8	1.8	19.1	19.1
Miles crossed along Burlington Northern right-of-way	-0-	-0-	-0-	3.9
Miles of riparian land crossed	<u>0.3</u>	<u>0.2</u>	<u>0.4</u>	<u>0.2</u>

DNRC and MPC talked with local landowners to develop more acceptable tentative locations for the line through some of the problem areas identified for the Foothills Route. The resulting adjustments probably would add several sharp corners and more than 2 miles to the length of the Foothills Route. Guy wires supporting corner structures and span structures would cause some interference with agriculture. Also, adjustments to resolve problems for certain landowners were likely to create new problems for adjoining landowners.

DNRC used information collected during its fieldwork to assess whether the line could be built to avoid or minimize impacts on farm activities.

DNRC studies also discovered potential problems with the Crossover and Railroad routes not known at the time of application. A planned Burlington Northern rail expansion, planned widening of Highway 191, and landowner plans pose potential conflicts with siting of a transmission line near Sipple. DNRC is recommending a wider route in this area to allow flexibility to address potential siting problems with these plans.

DNRC's recommendation for the Crossover Route was influenced in part by a detailed examination of the probable impacts the transmission line would have on various land uses. In response to comment on the draft from MPC, DNRC remeasured the categories of land uses crossed. Table 1 presents the results of this effort in more detail than displayed in Table 2 of the draft. Differences in measurements in draft EIS Table 2 and final EIS Table 1 are due to the table format and the fact that measurements were taken from aerial photographs. This table shows the type of land-use category crossed and how fields are crossed.

WEED CONTROL ISSUES

In its draft EIS, DNRC identified weeds and weed control as major concerns of landowners. This section discusses the issue in greater detail and presents new information obtained since the draft EIS. Weed concerns in the study area fall into three distinct but related categories, as discussed below.

Prevention of Weed Establishment on Land Disturbed by Construction.

A major landowner concern is the prevention of new stands of weeds on lands disturbed by construction activities. Concern was expressed in particular over the Foothills Route, which currently has less of a problem with established stands of weeds than the other routes. This concern is best addressed by measures to ensure speedy establishment of perennial grass cover on all land disturbed during construction, followed by later inspection and spot control of any newly-established stands of weeds. Specific measures to achieve this mitigation are contained in Section 4.4 of DNRC's Standard Environmental Specifications. Cost of these measures would be similar for all routes but would probably be somewhat greater for the Foothills Route which would require more new access road grading and sidehill construction.

Prevention of the Spread of Weeds by Construction Equipment

Another concern is the potential spread of noxious weeds from weedy areas to new areas by construction vehicles and equipment. This is a concern on all routes since they would all use a portion of the Milwaukee Railroad right-of-way. Spread of weeds can be mitigated by either (a) using different construction machinery on

infested areas and noninfested areas; or (b) washing vehicles to remove weed parts and seeds before leaving an infested area (see Section 2.8, DNRC's Environmental Specifications). The choice of method should be left up to MPC and/or the contractor. Costs to implement this measure probably would be greater on the Crossover or Railroad routes than the Foothills Route since more construction would occur on the railroad right-of-way.

Responsibility of MPC for Weed Control.

The Montana Weed Law (7-22-2101, *et seq.*, MCA, 1983) makes it unlawful to permit any noxious weed to go to seed. This law applies to all lands and is not superseded by MFSA. The responsibility for control of weeds under this law rests with the landowner. If the owner of the land refuses to control the weeds, the county can assume responsibility and receive reimbursement through a tax lien on the property. At present, the responsibility for control of the existing weed problem along the Milwaukee right-of-way appears to lie with the Milwaukee Railroad. The responsibility of MPC to assume control of this weed problem would depend entirely upon the terms of the easement agreement or other interest MPC obtained from Milwaukee for construction of the line. MPC might assume no responsibility at all for control of pre-existing weed problems, aside from the tax assessments by the county on the value of MPC's right-of-way, part of which could be used for weed control. Since existing weed laws would have to be complied with no matter which route is selected, the issue of control for a pre-existing weed problem does not weigh in favor of any route.

DNRC considered possible costs for control of weeds along the Milwaukee right-of-way in making its route selection, and after consultation with the local weed supervisors, developed a reasonable estimate for control of weeds on this right-of-way. The cost for cleaning up the weed problem on the portion of the Milwaukee right-of-way that would be used by the Crossover Route is estimated to be about \$19,000. A cooperative agreement among landowners, local weed boards, and MPC would be the most desirable option for control of weeds on the Milwaukee right-of-way.

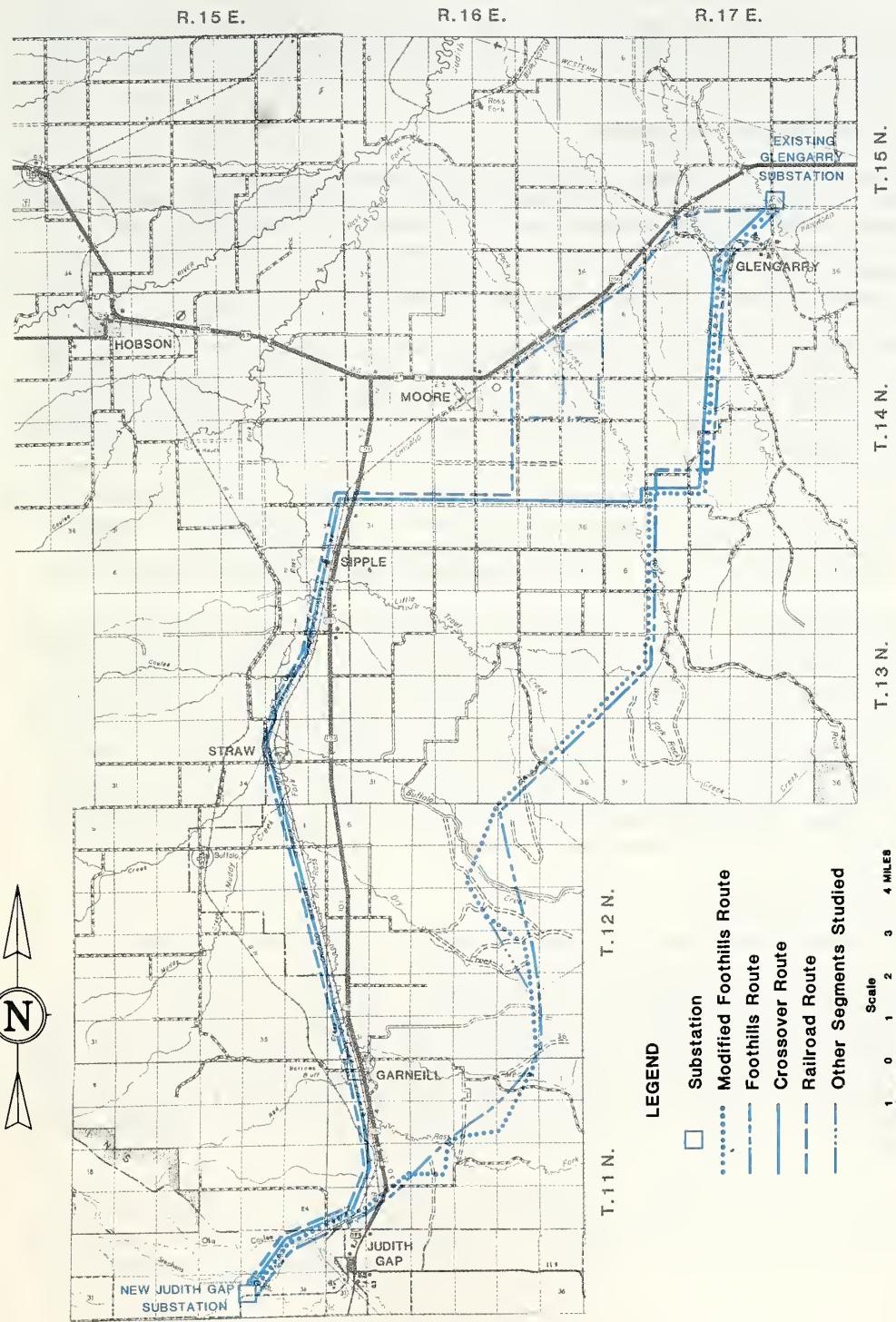
RAILROAD ROUTE ANALYSIS

In comments on the draft, DNRC was asked to further investigate the Railroad Route, particularly with respect to the Moore airstrip, highway safety issues, ownership of the Milwaukee right-of-way, and costs and reliability of placing the 100 and 50-kV lines on the same set of poles. DNRC was also asked to evaluate an alternative routing option east of Moore and to evaluate cost figures and impacts of placing the new line and an existing line on the same set of poles between Moore and Glengarry. The following sections present this information and an analysis of the Railroad Route.

Ownership of Milwaukee Right-of-Way

Ownership of the Milwaukee right-of-way is under consideration by a bankruptcy court. No clear determination of the ownership is likely until it is settled by the court. The reason for this situation rests with various instruments used by Milwaukee to acquire the right-of-way. In some instances, there is no record of any acquisition of property right prior to construction of the railroad. Some instruments of record specify that if the railroad ceases to operate, the

FIGURE 2
ROUTES BETWEEN JUDITH GAP AND GLENGARRY SUBSTATIONS *



* The lines shown on this map have been offset slightly to show railroads and roads.

right-of-way would revert back to the original owner. Others say nothing on the subject. DNRC is aware of landowners' claims to ownership of land along the Milwaukee right-of-way.

The question of ownership of the right-of-way does not favor any route, and options are available to provide for easement acquisitions if a route along the Milwaukee right-of-way is selected.

Highway Safety Along Railroad Route

At the public meeting on the draft EIS held in Moore on December 5, 1984, several local residents contended that DNRC concern over the traffic hazard created by the Railroad Route was unreasonably cautious. Residents commented that transmission poles in Montana frequently are located within 30 to 40 feet of a highway. These residents contended that the Railroad Route should have been chosen as DNRC's preferred route, because the concern over traffic safety was not valid.

The draft EIS and DNRC's analysis indicates that transmission towers probably would be 40 to 50 feet from the edge of the highway for approximately 3 miles. Movement of the line to the south away from the highway would place the line in cultivated lands and, in some areas, fields would be crossed at angles, increasing potential for adverse impact.

During preparation of the draft, MDOH told DNRC in a telephone conversation that poles within 40 to 50 feet of Highway 87 could pose a traffic hazard to highway travelers because of the poor driving conditions that frequently occur on this particular roadway and the shallowness of roadside embankments (MDOH 1984).

As a result of public comment, DNRC has conducted additional research into the traffic safety issue. The Montana Department of Highways (MDOH) guidelines require a minimum 30-foot clearance area, called a recovery zone, between the edge of highway and fixed hazards. One logical location for the proposed transmission project would place poles just outside this recovery zone area. Letters from MDOH and the Justice Department obtained since release of the draft EIS are contained in Appendix A. These letters indicate that MDOH prefers locations as far away from roadway edge as possible, though 40-50 feet would be acceptable. DNRC concludes that highway safety on the Railroad Route is less of an issue than presented in the draft EIS. Other potential impacts of the Railroad Route are discussed below.

Alternative Routes Proposed

Two alternative routes were presented in written comments and at a public meeting on the draft (see Figure 2). These alternatives were originally investigated by DNRC in the field but not selected as alternatives either for further study or as part of the route analysis presented in the draft. Although both alternatives would locate the line farther from the Moore airstrip, the effect would be minimal since the Moore airstrip has not been operated for some time and has been removed from state aeronautic charts. DNRC agrees that the Moore airstrip does not pose any constraint on the line along the original Railroad Route, contrary to the suggestion in the draft EIS.

The two alternatives also would reduce any remaining highway safety concerns along portions of the Railroad Route. The first option, located 2 miles east of Moore along a county road, would reduce by about 1.5 miles the length of line along the highway in the area of highway safety concern. The route would require an additional 90 degree corner and add 0.5 miles to the route's length. The second alternative would locate the line 3 miles east of Moore. This location would place the line on a section line. Two miles of cultivated field would be crossed because there is no county road in this area. Cropping patterns are east-west in this area and would require crossing the field at right angles to the cropping pattern. If single-pole construction were used, as many as 24 structures would be placed in fields. For H-frame construction, the number of structures in fields would be 14. This option would effectively eliminate any concern over the highway safety on this route but would increase the impact on agricultural land and add a total of 1 mile to the line's length.

DNRC's analysis of the Railroad Route in the draft discussed other land-use problems that would not be alleviated by these options. Specifically, the 2.5 to 3-mile portion of this route west of the Glengarry substation would cross agricultural land on either side of the Beaver Creek drainage. This land is already crossed by a 50-kV and 100-kV transmission line. Unless more than one line per set of poles were used on this stretch, greater land-use conflicts and agricultural interference would occur from placement of an additional line parallel to these lines at a distance of 80 feet. Entering the substation from the west could also cause siting problems, since location of the substation and existing lines require that a new line enter from the south or east.

Costs and Reliability of Double Circuiting

The Board asked DNRC to further investigate the costs and impacts of placing the new line and an existing line on a single set of poles. In response to the Board's request, DNRC asked MPC for additional information on cost estimates and engineering problems relating to double circuiting on portions of the Railroad Route. MPC said that the cost figures presented on this topic in the draft EIS were far too low, although they had come from MPC originally. DNRC asked MPC for clarification.

MPC indicated that the figure supplied earlier and used in the draft (\$30,000/mile) and that supplied later on the comments to the draft EIS (\$50,000/mile) were based on different assumptions.

Both cost estimates were derived from historical construction costs inflated to the proposed year of construction. Assumptions include an average annual inflation rate (estimated by MPC at 7%), and construction by contract labor.

There are two reasons for the additional cost of double-circuit construction. Engineering and operational constraints of placing the 50-kV and 100-kV line on the same set of poles means that shorter span lengths are required. Span lengths to 300 feet would be necessary compared to 450 feet for a single-pole 100-kV line. Shorter span lengths increase the number of poles to be installed per mile of line, which would increase both material and construction costs. Other costs would result from the fact that the existing line must be removed.

The cumulative affect results in substantial increase in per mile cost for double-circuit construction over that of single-circuit construction. Single-wood or H-frame construction is estimated to be \$58,000 per mile, while double-circuit construction is calculated at \$108,000 per mile.

The information supplied by MPC did not contain sufficient detail for DNRC to independently evaluate the cost estimate. DNRC believes that costs for double circuiting would be higher than single circuiting, but has no data to indicate whether these costs would almost double the cost of construction.

DNRC also asked MPC to provide information regarding impacts to the system of placing the new line and existing 50-kV line on the same poles. If the new 100-kV line were placed on the same poles with the existing Harlowton-Glengarry 50-kV for 10 miles between Moore and Glengarry, the 50-kV line would be out of service for at least 2.5 to 3 months.

In addition, this construction outage would leave the Nihill-Judith Gap-Moore service area on a radial feed from Harlowton. Any outage on this line would leave the affected customers without power until repairs could be completed.

MPC anticipates that construction will occur in 1986-1988. MPC indicates that this change is due to the time required to complete the survey, design, procure right-of-way, and obtain centerline approval once a certificate has been approved. The schedule change also is due to a decision by MPC to delay construction on most projects until 1986. Conceivably, this planned delay could result in winter construction of the project. If winter construction occurs, low voltage levels can be expected under system normal conditions. This situation would also affect service to Nihill-Judith Gap-Moore because an outage on the radial feed from Harlowton could leave the area without power until the problem could be corrected. MPC contends that reliability would also be compromised since any outage on the double-circuit portion would affect both lines.

MPC's analysis presents a worst-case scenario for construction of double circuiting along this portion of the Railroad Route. Problems with winter construction could be avoided by scheduling construction for summer, but this might not solve the problems for which double circuiting is proposed, particularly if the new line's location causes additional short-term land-use conflicts during construction of the 100-kV line and removal of the old 50-kV line. Similarly, DNRC disagrees with MPC that reliability of double circuiting would be a major issue. There would be a decrease in reliability under MPC's criteria, but the chances of an outage occurring and the frequency of likely outages would be very low.

DNRC's analysis indicates double circuiting would be more expensive than single circuiting and could create more problems than it was meant to solve. For these reasons, DNRC does not support double circuiting along this portion of the Railroad Route.

CHAPTER FOUR COMMENTS AND RESPONSES

This chapter contains comments on the draft EIS and DNRC's responses to them. The comments presented here represent a summary of those received by DNRC in writing and orally at public meetings on the draft EIS. Additional information responding to comments is provided in Chapter Two as noted in DNRC's responses.

The comments in this chapter are categorized by subject. Copies of letters received are contained in Appendix B. Because of the similarity among many comments received, some individual comments have been consolidated for brevity and readability.

LAND USE:

COMMENT: The differences between the Foothills Route and Modified Foothills Route for dry cropland crossed and railroad and county road right-of-way used as shown in the draft EIS, Table 2, page 30, should be more nearly the same, given the route refinements applied by DNRC. (MPC)

RESPONSE: DNRC agrees. In response to this comment, DNRC remeasured all categories of land crossed by the routes shown on Figure 1. This information and discussion is presented in Chapter Three.

COMMENT: In some locations, especially where single-pole structures would be used on INRC's Crossover Route, the installation of the existing distribution line on the same poles as the new line would limit span lengths to 300 feet or less, resulting in up to 17.6 spans per mile. (MPC)

RESPONSE: DNRC is considering a 1.1 mile wide route in this area which would allow siting of the line either in the location shown in Figure 1 or 1 mile south along the Crystal Lake Road. A location on either the north or south side of these roads is being considered. Options could be evaluated during centerline study to determine if placing the distribution line on the same poles could reduce impacts in certain areas, along with costs of doing so.

COMMENT: How does DNRC compute displacement of 0.04 acres per mile? (MPC)

RESPONSE: The figure 0.04 acres per mile used on page 5 of the draft EIS is an estimate of production displacement for row crops and was intended as a worst-case example based on DNRC's review of literature on agricultural production impacts due to transmission lines. DNRC's methodology is based on research by Gustafson et. al. 1978. DNRC assumed an average displacement figure for both single-wood-pole and corner structures which included a number of poles per mile (11.6) and a farm equipment clear distance of 12 feet around each structure. Using this estimate, total production displacement per mile would amount to about 1742 square feet, an area equal to about 150 square feet per structure. DNRC acknowledges this estimate may be high. The amount of land that would be removed from production is difficult to determine because of different types and sizes of equipment that may be available, and because of individual farming practices. The intent was to demonstrate that agricultural production losses under the worst conditions would be small, amounting to a loss of less than two bushels per mile.

COMMENT: DNRC's analysis mixes the discussion of land ownership and land use as if they were the same thing. Land ownership does not imply a particular land use nor does use imply a particular ownership. There is good reason why these two generally are not mixed. Mixing only confuses an otherwise clear distinction.

Because of this mixing, the very crucial questions of how much cultivated land is crossed and the seriousness of the impacts cannot be addressed. If impacts to cultivated land are tabulated, Table 2 and Table 3 (pages 30 and 31 of draft) will look quite different. (MPC)

RESPONSE: DNRC disagrees. DNRC's analysis determined that use of county road and railroad right-of-way would reduce project impacts. The railroad and county road right-of-way is classified on county tax roles as dedicated right-of-way. Reduction of impacts by placing the transmission line within an existing right-of-way is a policy of the Board. In addition, MFSA requires that consideration be given to use of public lands over private lands where economic costs and environmental impacts allow. DNRC does not consider incidental farming on county road right-of-way to be a dedicated land use. Therefore, siting the line in the right-of-way does not have an impact on agricultural land use. DNRC gave preference to use of right-of-way for siting the line. A more detailed presentation of these differences among routes and DNRC's analysis of them is presented in Chapter Three of this final EIS.

COMMENT: The transmission line structures would affect farming in areas where farming has encroached upon unused road easements. This could lead to weed problems in unfillable areas around poles or in areas between poles, especially if large equipment is used by the farmer. (MPC)

RESPONSE: DNRC disagrees. Placement of poles inside county road right-of-way might not prohibit use of the land between the spans for agriculture, depending on the size and type equipment used and how the area is farmed. Careful placement of structures could reduce interference with existing agricultural practices. Weed control could be accomplished by spraying around poles. If farming were discontinued, the right-of-way could be reseeded to desirable species to prevent establishment of weeds in the right-of-way.

COMMENT: Much of the area's road right-of-way may be producing crops. To locate the transmission facility where it does not affect crop production may pose a safety hazard to vehicular traffic. (MPC)

RESPONSE: DNRC disagrees. County road right-of-way considered for transmission line location receives very little use. Although most county road right-of-way is 60-feet wide, many of the roads are single-lane vehicle tracks used primarily by farmers to move equipment. There is one occupied home along a two-lane portion of these roads. Fergus County Commissioners consider many of these roads to have such low traffic use that little or no maintenance is provided. Fergus County has no plans to improve these roads and has indicated to DNRC that there would be no foreseeable problem with locating the line along one edge of the right-of-way. Also see previous comment and response.

COMMENT: Access gates can be removed or locked after construction so that trespass is minimized. MPC's road closure policy results in a low probability of increased access and subsequent vandalism to cultural resource sites. (MPC)

RESPONSE: DNRC agrees in part. Measures can be taken to avoid trespass problems, but such measures may not eliminate unauthorized use of access developed for the transmission line. Trespass problems along the transmission line are considered a secondary impact of the project and a nuisance to the landowner.

COMMENT: The Crossover Route appears to go through Garneill and Straw affecting all residences there. What happened to Sipple? (MPC)

RESPONSE: The only structure in Sipple is a grain elevator. Two houses are located a quarter mile south of the elevator. Sipple was included on Figure 1 as a point of reference but was not considered to be a townsite. The homes located near the Sipple elevator were included in the DNRC's aesthetic analysis of the Crossover Route which is summarized in Table 2, page 30 of the draft EIS.

COMMENT: The Moore airstrip has been abandoned for over 20 years, so there can be no problem there, regarding the acceptability of the Railroad Route. (private landowner)

RESPONSE: DNRC agrees. In response to comments raised at public meetings, DNRC further investigated conflicts with use of the Moore airstrip by the transmission line if sited along the Railroad Route. Also see Chapter Three regarding further analysis of this route.

RADIO AND TELEVISION INTERFERENCE:

COMMENT: The statement on page 28 saying that all routes would have similar radio and television impacts is incorrect. For example, the use of citizen-band radio is not affected as much on the Foothills Route as along routes that are along county roads. Also, residents of Garneil, Straw, and Sipple will have much greater impacts. No cost estimate has been prepared for mitigating interference problems, and if such mitigation is necessary, it will increase the costs of that particular route. (MPC)

RESPONSE: DNRC agrees in part. Although there will be differences in radio frequency interference (RFI) impact among the routes, differences among routes are very small. RFI from new 100-kV transmission lines is not usually of high concern because of its low intensity. Modern lines are designed to reduce RFI so that it usually is detectable only within 200 to 300 feet of the transmission line. According to DNRC's study of the proposed transmission line, there are four residences within 500 feet of the Foothills Route (the fewest among the routes) and 10 residences within 500 feet of the Benchland route (the most), a difference of 6 residences where impacts might occur. Measures to reduce RFI impacts at residences are not costly and in most cases are entirely effective (Loftness 1977, 1980). Therefore, there will be only minor differences among routes with regard to RFI impacts to residences. The comment is correct with respect to impacts to CB radios in vehicles. There will be some interference with reception in vehicles traveling on roads next to the transmission line.

COMMENT: MPC transmission lines are not covered by FCC regulations with respect to radio frequency interference with communication systems. (MPC)

RESPONSE: While the FCC does not have numerical standards with respect to radio frequency interference, other FCC regulations do apply to transmission lines. Industry reports, handbooks, and FCC officials contacted by DNRC refer to a transmission line as being subject to FCC regulation 47 CFR 15.25 because it is defined as an "incidental radiation device... (which) radiates radio frequency energy during the course of its operation although the device is not intentionally designed to generate radio frequency energy." The FCC regulation states, in part, that incidental radiation devices be operated to eliminate any interference that "seriously degrades, obstructs, or repeatedly interrupts" normal signal transmission or reception (47 CFR 15.4(6)). According to the FCC this regulation requires the owners of transmission lines to reduce interference to an acceptable level. Owners are not expected to correct interference with very weak signals, however. Some utilities disagree with the FCC interpretation of the regulation and maintain that it does not apply to transmission lines. None of the reports available to DNRC (including industry reports) indicates that these requirements will be onerous or will interfere with the construction of transmission lines.

DNRC feels that it is not necessary to address the issue of the disagreement over the FCC jurisdiction. The MFSA rules recently promulgated by DNRC include the following rule: "that appropriate mitigation has been identified to prevent unacceptable interference with stationary radio, television, and other communication systems and will be included in conditions to the certificate." In keeping with these rules, DNRC will recommend to the Board that appropriate mitigation to address radio and television interference by the line be adopted and implemented. This requirement would also be part of the construction specifications recommended for the project.

COMMENT: What are the likely effects of the transmission line on FM band two-way radio, and are there any mitigation measures to reduce the effects? (private landowner)

RESPONSE: In general, FM signals are affected less than AM by interference from transmission lines and often there are no impacts (Loftness 1977, 1980). Mobile units might be affected if the receiver is used near or under a transmission line and, in this case, the person would have to move the vehicle. If a transmission line were routed close to a residence or business having a base station for such a system, there are mitigation measures that should be used to eliminate the problem. These include installation of remote antennas. Also see earlier comment.

GENERAL:

COMMENT: The draft EIS shows many areas of disagreement between DNRC and MPC. These differences range from relatively minor differences in desired wording in the EIS to major differences between our opinions on the siting methodology used and the accountability of DNRC in that siting process. (MPC)

RESPONSE: All of the specific comments made by MPC in the above categories are responded to specifically in the following pages. However, not all the points made by MPC refer to anything specific in the EIS and require a general response.

One of the purposes of the draft EIS is to provide analysis of a project on the basis of the best information available at the time. Examination and comment on this information and analysis by the applicant, the public, and other interested parties help define the best course of action. Commonly this course of action, as prescribed by the Board, be at some variance with both the applicant's proposal and DNRC's recommendations in the EIS. As foreseen in the statutes, this action by the Board is designed to provide the greatest benefit to the citizens of Montana.

COMMENT: MPC ranked the routes using concerns similar to those presented in Table 2, page 30 (excluding the specific agricultural land-use categories), and found the Crossover Route is second to either Foothills route. (MPC)

RESPONSE: DNRC disagrees. MPC's application indicates on the basis of a survey that public opinion supports the Foothills Route because of land use, visuals, and other concerns. In two public meetings DNRC held in the study area, strong public opinion was voiced against the Foothills Route. Public comment strongly favored a route following the abandoned Milwaukee right-of-way and Burlington Northern Railroad as much as possible.

DNRC's evaluation indicates that potential land-use impacts are a major concern of local landowners. DNRC discovered errors in mapped land-use data submitted with MPC's application. MPC's analysis did not consider impacts of the Foothills Route on mechanically irrigated fields that would be crossed 1.5 miles north of Judith Gap. This route would also cross several cultivated fields at an angle, making it difficult to reduce impacts.

Some differences in treatment of impacts resulted from DNRC's more refined information collected during field work. On the Crossover Route, MPC generally classified most land as cultivated, even though the line could be routed on road and railroad right-of-way. DNRC is not concerned with crop production loss in cultivated right-of-way. In its analysis of the routes, DNRC concluded that opportunities for low land-use impacts were greater on the Crossover Route where the Milwaukee Railroad and county road right-of-way could be used to site the line for much of its length. DNRC also ranked the Crossover Route as having lower aquatic impacts, as discussed in more detail in another comment and response.

DNRC and MPC agree that the line on the Crossover Route will be more visible than if it were on the Foothills Route. The Crossover Route is closer to residences and highways.

COMMENT: Installation of the transmission line on the Railroad Route would not create weed or erosion problems worse than those that already exist there, but use of any other route would create new weed and erosion problems. (private landowner)

RESPONSE: DNRC agrees. When the Milwaukee was abandoned, the tracks and many of the ties were salvaged. During the salvage process, vegetation was disturbed and erosion has resulted.

Some erosion can be expected as a result of construction activities, but the degree of erosion is expected to be lower on the Railroad or Crossover routes than on the Foothills Route because of the nearly level terrain and the fact that the Crossover and Railroad Routes are closely paralleled by highways and county roads, reducing the number of new access roads that would be needed.

Weeds are known to be a problem along the abandoned Milwaukee right-of-way. This problem could be worsened if construction were to spread weed seeds from infested areas on the right-of-way to adjacent agricultural land. DNRC considers the Foothills Route to pose the greatest threat for spread of weeds to new areas because of likely disturbance along this route from construction and the distance of this route from the right-of-way. The threat for spread of weeds could be reduced somewhat by washing equipment to remove seeds and plant parts after use in a weedy area, or by using different equipment on infested areas.

COMMENT: In the vicinity of Little Rock Creek, the Crossover Route crosses Sections 28 and 21, through agricultural land and over a very steep hill where an access road would have to be built in order to build and maintain a transmission line. This could create a serious erosion problem. (private landowner)

RESPONSE: DNRC agrees in part. Both the Foothills and Crossover routes have this area in common. Without a surveyed centerline, it is difficult to predict exactly where access roads would be required since the pole locations are unknown. However, it appears that in this area the steepest areas may be spanned. It may be possible to use existing roads to move construction equipment around the steepest areas. The steepest slopes are in the 20-25 percent range but are less than 1000 feet long. The remaining areas are not as steep (6-10 percent) and the potential for erosion is much lower. If roads had to be constructed on the steeper slopes, there would be a high potential for erosion on those areas.

COMMENT: What long-term assurance does the landowner have that disturbed fragile areas will be reseeded when the line has to be repaired? (private landowner)

RESPONSE: Such a situation is possible after release of the reclamation bond and completion of DNRC's construction monitoring efforts. The landowner's first recourse would be to contact MPC and have the area restored as specified in the easement agreement signed by the landowner. If the settlement offered by MPC is not agreeable to the landowner, then his next action would be to seek satisfaction through the courts.

COMMENT: A transmission line running along an existing line next to the railroad right-of-way would be safer for spray pilots than a line running at an angle cross-country. (private landowner)

RESPONSE: DNRC disagrees. No definitive statement can be made on what location is the best from the standpoint of spray pilot safety. In an effort to clarify this issue, DNRC contacted six spray pilots who operate in the Judith Gap-to-Glengarry area. There was no consensus among them as to the best location for a powerline. Research in other states which DNRC has reviewed indicates much depends on local conditions such as topographic obstructions, field orientation, and prevailing winds.

One reason for keeping the new line away from existing lines is to avoid creating a large area between the lines that cannot be sprayed by aircraft. It should be remembered that the poles may not be located less than 80 feet from the existing line next to the railroad.

If the line were not built next to the railroad tracks, it would follow field edges which may have a fence. One pilot mentioned that he sometimes flies beneath lines but wouldn't do so if there were a fence, or if there were two lines with poles spaced differently for each line.

COMMENT: Construction and maintenance activities when the ground is wet would cause rutting and erosion along the Foothills Route. (private landowner)

RESPONSE: DNRC agrees. Rutting could happen along any route, although the potential for erosion is greater on the Foothills Route. The most effective method for avoiding rutting is to not construct during periods of high soil moisture. Maintenance inspections are made once or twice a year from aircraft. On-the-ground maintenance would not be necessary unless problems occur, and these would be rare.

COMMENT: The Foothills Route would have adverse effect on wildlife. Right-of-way roads would cross elk wintering range and increase trespass into an undisturbed roadless area. The addition of a road would allow more people and more left-open gates. (private landowner)

RESPONSE: DNRC agrees in part. The Foothills Route has a slightly higher risk for adverse wildlife impact than the other routes studied (draft EIS, Table 2). However, DNRC concluded that wildlife impacts can be avoided.

Annual use of winter range would not be affected by the line unless construction occurs during winter. Impacts to wildlife would be considered small if this occurs because animals could safely move to surrounding areas without harm, and timing restrictions developed in consultation with the Department of Fish, Wildlife and Parks (DFWP) could be placed on construction to minimize disturbance where necessary.

Hunters may gain access on roads used for construction, creating trespass problems for landowners. Gate closures and reclaiming of temporary roads would reduce the potential for this impact.

COMMENT: Table 2 (Summary of Length, Cost and Environmental Resource Concerns for Possible Route), presents costs as total project cost figures even though the table purports to be discussing only factors relevant to route comparison. The comparative figures on Line 2 for the Foothills Route and the Crossover Route should be \$1.9 and \$2.2 million respectively, not \$6.1 and \$6.4 million. Likewise in Table 3, the Foothills Route should show a cost advantage of \$300,000. (MPC)

RESPONSE: DNRC agrees in part. Generally the Foothills Route shows a cost advantage, primarily because of its shorter length. However, DNRC identified several problem areas along the Foothills Route and adjustment of the reference centerline to avoid these problems as discussed in the draft EIS could increase the line's length and cost. Table 3 should show a cost advantage for the Foothills Route, but any adjustment of the route could drive the costs up.

COMMENT: Where is the ** located which is footnoted? (MPC)

RESPONSE: The present notation in Table 2 (page 30) reads "Railroad ***." It should read "Railroad **." The first sentence of the footnote itself contains a typographical error. The word "difficult" should be "different."

COMMENT: Guy wires are required whenever the line makes an angle to change direction. The word "corner," as used on page 5 of the draft EIS, implies a 90 degree angle. (MPC)

RESPONSE: DNRC recognizes that the term "angle" is correct for use by people familiar with transmission technology. However, for use by the readers of this EIS, the term "corner" is preferable, to indicate a change in direction by the transmission line.

COMMENT: DNRC should further study the effect on business band radios, the ownership of the Milwaukee right-of-way, and should investigate possibilities for cost-sharing agreements to reduce weed control problems. (private landowner)

RESPONSE: Further information on these questions can be found in responses to other comments in this document and in Chapter Two. The effect on citizens band radios is addressed in Radio and Television Interference portion of the Comment/Response Section. Cost sharing agreements and other means for controlling weeds are discussed in Chapter Three as is the ownership of the Milwaukee right-of-way.

COMMENT: Safety of highway travelers as a concern for dropping the Railroad Route does not warrant the weight DNRC has given it. (private landowner, public)

RESPONSE: DNRC agrees. Analysis presented in the draft EIS also showed that there were other concerns which were considered disadvantages of the Railroad Route. The traffic safety issue is discussed in more detail in Chapter Three. There also is additional comparison of the Railroad Route and alternatives.

COMMENT: The time involved in this process is absolutely ridiculous, the date of application being June, 1983, and as stated at the public meeting, it will be in the spring of 1986, in all probability, before construction could possibly begin. If nothing else, it will double the cost. (private landowner, public)

RESPONSE: DNRC disagrees. The time involved in processing an application is prescribed by the Montana Major Facility Siting Act (MFSA). DNRC recognizes the need for voltage support in the area and has recommended that MPC be allowed to construct the Judith Gap substation after the Board approves a route. This would provide voltage support to the system for the 1985-1986 winter. Haphazard siting of the line would increase the cost to others such as the unnecessary interference with agricultural production. Many of those who have participated at public meetings and in personal interviews conducted by INRC consider that the process was necessary and has been effective in avoiding unnecessary impacts. The process of defining the final location of the line, known as "centerline selection" is an equally important step in avoiding sensitive features on private land. The cost of this process will not significantly affect the total cost of this project.

COMMENT: The impact analysis presented in Table 2 does not agree with MPC's water quality and aquatic biota impact analysis for the Foothills and Crossover routes (MPC's preferred and second choice alternatives). Use of the railroad right-of-way portion of the Crossover Route would cause few impacts. To use the corresponding portion of the Foothills Route would result in negligible impact. (MPC)

RESPONSE: DNRC disagrees. MPC considered streams in violation of water quality standards or subject to existing streambank erosion to be less preferable for transmission line crossing than other streams. Short-term authorization to exceed water quality standards would be necessary from IHES on any stream where water quality standards would be exceeded during construction. DNRC assumed that the risk of impact to water quality and aquatic biota was greater where streams of higher gradient would be crossed. Generally such streams have a better fishery which is more susceptible to lowering of water quality. The possibility of new access road construction near streams on steep slopes (especially sidehill construction) and potential stream crossing requirements during construction were important considerations in assessing the risk of aquatic impact. The risk of impact is generally higher where new access roads would be constructed on side slopes in steep terrain (as would be the case with the Foothills Route). DNRC concluded that aquatic impacts were not a major factor in route comparison because of generally low quality of water and fisheries in streams crossed, and considering the methods available for reducing impacts to such streams.

WEEDS AND WEED CONTROL:

COMMENT: The discussion of weed control on the Milwaukee right-of-way has little to do with line location unless there is substantial complimentarity between weed control activities and transmission line construction activities. (MPC)

RESPONSE: DNRC agrees. The comment is correct in its implication that the Weed Control Act would require weed control along any of the routes. Since DNRC is considering a route that would place the line within the railroad right-of-way, acquisition of an interest in this right-of-way by MPC could trigger provisions of the Weed Control Act. In Chapter Three, DNRC presents additional information on this issue.

COMMENT: Weed control problems along the Milwaukee railroad may be compounded by the close proximity to Ross Fork Creek which could limit herbicide use. For example, DHES or the Department of Agriculture (DOA) may restrict spraying activities. (MPC)

RESPONSE: DNRC agrees in part. Application of herbicide near Ross Fork Creek would require caution. Potential for impact can be minimized by following proper procedures for application and by use of trained persons to apply herbicides. The Fergus County Weed Board has suggested use of banvil-amine along the Milwaukee right-of-way. The label specifications for this herbicide prohibits application in water but allows application to the water's edge as long as precautions are taken to prevent entry into streams. The person applying the herbicide would have to specify how the herbicide would be kept out of the stream. DNRC would work with MPC on the development of any application measures during centerline study. Consultation with DFWP, IHES, and the DOA would be necessary when determining final methods and chemicals for application. Herbicide use would also have to be specified in the environmental specifications. The most likely means would be (1) to limit application to hand or wick application adjacent to Ross Fork Creek, and (2) to limit time of application to weather conditions in which rain is unlikely for the few days following application.

COMMENT: The County Weed Control Act should already cover control of noxious weeds, and we see no reason for MPC to be held responsible for the correction of an existing problem. The Weed Control Act gives all responsibility to the county to act accordingly. There is no reason for MPC to become involved in sharing costs before construction. (MPC)

RESPONSE: DNRC agrees. IF MPC were to acquire an easement or other interest in the right-of-way, it could be partly or wholly responsible under this law for weed control. Additional information on weeds is presented in Chapter Three.

COMMENT: What measures can be taken to reduce transporting of weeds? (MPC)

RESPONSE: DNRC's standard environmental specifications (draft EIS, Appendix B) cover this issue. The standards recommend that vehicles and equipment leaving weedy areas be sprayed and washed to minimize the potential for spread of weed parts and seeds.

ROUTES:

COMMENT: The Foothills Route as plotted in Figure 1, page 2, of the draft differs from MPC's route in T 13N R16 and 17E. The EIS does not mention a route refinement in this area and Figure 1 may be in error. (MPC)

RESPONSE: DNRC agrees. The Foothills Route as shown on Figure 1 is in error. This error was made in preparing the map for publication. This error has been corrected as shown on Figure 2 printed in this document. However, DNRC's analysis of the Foothills Route was based on the route specified by MPC and drawn on USGS quadrangle maps. The map error in the draft EIS did not affect this analysis.

COMMENT: The route adjustment shown on Figure 1, Page 2, of the draft EIS in the East Buffalo Creek area should start approximately 1.5 miles farther south than where shown. (MPC)

RESPONSE: The original location and the change suggested in the comment is included in Figure 2 of this document. The location depicted on Figure 1 and discussed in the text of the draft EIS was intended to show an adjustment across property of a landowner who expressed concern over the original location. The change suggested in the comment was not discussed with adjoining landowners. DNRC acknowledges that additional adjustment in this area could further improve the final location of a centerline on this portion of the Foothills Route. If this route were selected, DNRC would contact adjoining landowners in the East Buffalo Creek area regarding placement of a centerline on their property. This study would occur during final centerline evaluation.

COMMENT: Table 2, page 30 of draft EIS, shows the Crossover Route to be approximately 35.6 miles in length. MPC's estimate shows this route to be 37.0 miles in length. (MPC)

RESPONSE: DNRC agrees. The figure presented in the draft EIS, Table 2, page 2, for the Crossover Route was taken from Table 5.4-6, Comparison of Installation Costs by Route, page 113 of MPC's application filed with DNRC. In response to this comment, DNRC measured the Crossover Route and came up with approximately 37 miles. DNRC notes that this length could increase or decrease depending on final centerline location and should be used only as a general measure to compare route lengths.

COMMENT: MPC is opposed to narrowing routes on any of the alternatives or route adjustments suggested by INRC. MPC sees no need for or benefit from reducing route widths. If route widths are reduced, INRC should provide specific centerline data to justify such action. Reducing route widths would cost MPC the flexibility needed in dealing with landowner concerns. (MPC)

RESPONSE: DNRC disagrees. DNRC discussed this concept with MPC management in two separate meetings. MPC officials at these meetings expressed support for the concept of a narrow route where possible.

There are some portions of the routes discussed which would not be suitable for the proposed facility unless it were located in an area narrower than the two-mile width that MPC proposed. For example, there would generally be no advantage to routing the line along the railroad right-of-way unless the poles were located inside the 90-foot right-of-way. In this and similar situations, DNRC sees no benefit in leaving the route wide. A variable width is suggested by INRC in Chapter Five.

SOILS & GEOLOGY:

COMMENT: Figure 3 on Page 8 of the draft EIS is misleading; MPC does not anticipate constructing a major road as the figure indicates. (MPC)

RESPONSE: Figure 3 was intended to show in general the basic operations and activities associated with construction of transmission lines of the size being proposed. The necessity for constructing or blading roads for access will depend on the route selected, terrain along that route, existing access, and equipment used by the successful contract bidder. The draft EIS, Chapter Five, Route Comparisons, discusses the differences among the routes.

COMMENT: It appears there are 15 separate locations where the railroad right-of-way crosses Ross Fork or its tributaries with no bridge. These are spaced apart such that access from Highway 191 or county roads to the west (through cultivated grounds) will be required to avoid or minimize construction activities near the creek. (MPC)

RESPONSE: DNRC disagrees. DNRC examined the significance of impacts associated with stream crossings and considered them to be less on the Crossover Route. Stream banks show evidence of disturbance where bridges or culverts have been removed along Ross Fork Creek. Little additional impact would be likely to occur if caution were exercised when crossing by rock fords or other means at these locations. Examination of aerial photos indicate culverts or bridges have been removed at ten crossings of perennial streams along a 19-mile portion of this route between the proposed Judith Gap substation and the crossing of Little Trout Creek (seven on Ross Fork Creek, and one each on East Buffalo, Meadow, and Little Trout creeks). Bridges or culverts have been removed at five or six crossings on intermittent streams.

Highway 191 is located within 200 feet of the railroad bed for 3.1 miles between Judith Gap and a point 2/3 mile north of Garneill. Access from the highway to the line could eliminate the need for a crossing of Meadow Creek, two or three intermittent streams, and the first crossing of Ross Fork Creek.

From the point where the highway and railroad diverge north of Garneill, access does not appear restricted for about 1.25 miles. Restricted access is most prevalent in a 5.5 mile stretch starting 2 miles north of Garneill. County roads intersect the right-of-way three times in this stretch. Either fords or culverts could be used for seven perennial stream crossings. Access could be confined to the borders of cultivated fields or across rangeland in this area.

Fords may be required at two crossings of intermittent streams between Little Trout Creek and the confluence of East Buffalo Creek and Ross Fork Creek. Highway 191 passes within 200 feet of the railroad at Little Trout Creek.

COMMENT: Access to the Foothills Route via roads intersecting proposed line locations is better than for the Crossover Route, which has fewer intersecting roads. Access is not continuous along the Milwaukee Railroad because bridges have been removed. (MPC)

RESPONSE: DNRC disagrees. From the point where the Foothills and Crossover routes diverge north of Judith Gap to the point where they converge near Rock Creek the number of existing roads intersected is similar. The Foothills Route intersects 14 roads and parallels a county road for about 2 miles. However, access is not expected to be continuous along the Foothills Route unless fords or bridges are constructed on Ross Fork Creek, Meadow Creek, Buffalo Creek, Little Trout Creek and Rock Creek. Furthermore, construction on the Foothills Route would require vehicle crossings on up to 25 intermittent streams. Approximately 12 miles of the Foothills Route is over rolling terrain with slope greater than 4 percent, where some blading would be required.

The corresponding segment of the Crossover Route intersects 11 roads, is located within a county road right-of-way for 7 miles, and is within 200 feet of Highway 191 for 4.5 miles. Terrain along this portion of the route is generally level with slopes not exceeding 2 percent. Access along the Crossover Route would be more continuous than for the Foothills Route because of the railroad bed and the fact that Ross Fork Creek could easily be forded where bridges do not exist with small impact to the stream.

COMMENT: Use of any portion of the Foothills Route would require access roads to be built all of the way with bridges to be built, leveling to be done and many problems coming along. (private landowner)

RESPONSE: DNRC agrees in part. DNRC's analysis indicates that the Foothills Route would have the greatest potential for erosion and sedimentation, because of terrain and slope, and greater requirements for blading new access roads and pads for construction equipment.

COMMENT: Earthquake potential is not an important factor in any route determination. The chances of occurrence are too rare to be of any significance. (MPC)

RESPONSE: DNRC agrees in part. Section 75-20-503(2)(h), MCA, lists seismic characteristics as one factor to be evaluated by DNRC. For this project, this concern is not important, as stated on page 23 of the draft EIS.

COMMENT: The statement on page 22 that side slopes of 4 percent (6 inches in 12 feet) or greater will require blading may be exaggerated.

RESPONSE: DNRC used this slope criterion in its analysis because it was supplied as part of MPC's application (Volume 3, Supporting Technical Data, Exhibit J Construction Guidelines, item 4.11). The exact amount of cut and fill on a slope will likely be dictated by the equipment requirements of contractors building the line. The intent was to provide a general measure of likely construction disturbance based on the information supplied by MPC.

COMMENT: Greater soil and vegetation disturbance would not occur along the Foothills Route, because there may be less traffic on each individual segment than on the Crossover Route, where county road right-of-way would be used. (MPC)

RESPONSE: DNRC disagrees. In those locations where the Foothills and Crossover routes do not coincide, potential soil and vegetation impacts are significantly more on the Foothills Route. The Foothills Route crosses 12 miles where side slopes exceed 4 percent and where there are few existing roads that can be used for continuous access. These conditions increase the likelihood of blading for new access and construction activities, which would increase the risk of erosion and sedimentation. Cross-country travel would result in greater soil compaction and vegetation disturbance than construction traffic on the railroad right-of-way. DNRC does not consider that significant impacts of this type will occur from use of the right-of-way as a transmission line location. The amount of traffic on county road has little to do with potential soil or vegetation impact from construction of the line.

COMMENT: The draft EIS says that compaction and erosion are the main problems for geology/soil. It then identifies building in floodplains as a big contributor to the problem. A route along Ross Fork Creek would have erosion and compaction impacts as a disadvantage. Numerous stream crossings would result from paralleling Ross Fork Creek on the Crossover Route, so how can stream problems be minimized? (MPC)

RESPONSE: The comment refers to statements made on pages 22 and 23 of the draft EIS. As noted on page 23, most of the potential trouble spots can be avoided. Little impact would occur if construction on areas susceptible to rutting or erosion were restricted to late summer when soil moisture content is lowest or in winter when the ground is frozen.

The use of the railroad bed and county roads for access will minimize the potential for new compaction problems, since construction activities probably would occur only short distances from existing access, limiting areas of new compaction.

There are several considerations relative to the potential for erosion. The area adjacent to the railroad is nearly level (slopes of 1-2 percent as indicated on USGS topographic maps) and few cuts or fills would be required for access. The characteristics of Ross Fork Creek and surrounding terrain are such that potential erosion and sedimentation impacts can be largely avoided with standard mitigation measures such as providing for a buffer strip between construction activities and the stream and minimizing construction activities within a certain distance from the stream. Most crossings of Ross Fork Creek could be accomplished with rock fords since the stream has a low gradient, relatively low flow and a stable

well-established channel. Landowners have told DNRC that Ross Fork Creek is sometimes dried up by irrigation in the summer. Such times would be ideal for crossing with construction vehicles and would cause a negligible impact to the stream. The Crossover Route has less impact potential than the Foothills Route for this concern.

COMMENT: Structures along the Crossover Route would be located adjacent to Ross Fork Creek for most of the distance that the creek parallels the railroad. (MPC)

RESPONSE: DNRC disagrees. Although a portion of the railroad bed is located in the valley of Ross Fork Creek, the creek meanders across, along, and as much as .5 miles away from the railroad bed. There are short segments where the creek is near the roadbed. However, the characteristics of Ross Fork Creek do not prohibit placement of structures near the creek in cases where such a location might be necessary. Structures could be located far enough from the stream to avoid impact to it.

COMMENT: On page 38 of the draft EIS, measures for avoiding or eliminating impacts to streams and soil are stated. These seven prohibitions are the best possible argument against a route using the railroad right-of-way along Ross Fork Creek. (MPC)

RESPONSE: DNRC disagrees. The methods were intended to be general guidelines for reducing potential impacts and were condensed from DNRC's construction specifications (Appendix B of draft EIS). The condensation of these measures may have contributed to confusion over their intent.

The intent was to state that additional analysis would be necessary to prevent or reduce impacts before the Board would approve a centerline for any route.

AESTHETICS:

COMMENT: We have a guest cabin, barns and other outbuildings within .75 mile of the Foothills Route. A transmission line within sight of the cabin would not only have adverse effect on the aesthetic qualities of this mountainous area, but would greatly reduce the market value of our land for sale as a guest ranch. (private landowner)

RESPONSE: DNRC agrees in part. DNRC's visual impact analysis indicates that the proposed line and associated access roads would affect the natural quality of this area. DNRC has no information to confirm or deny the effect of a transmission line on property values. Studies of the effects of transmission lines on property values have been inconclusive.

COMMENT: The statement "...landowners did not consider potential visual impacts an important determinant for route location...." is inconsistent with the statement on page 28, p. 6, "all persons preferred routes away from them...." If all persons prefer to have it away from them (page 28, p. 6) and the Crossover Route is visible from most residences, highway, and communities (Table 2, page 30), then public concern does not support the Crossover Route as being superior to the Foothills Route. (MPC)

RESPONSE: DNRC disagrees. Although people might not mind looking at a transmission line, this does not mean they want it to run across their hay fields.

Comment at two public meetings and during interviews suggested strongly that people wanted the line located away from them to avoid all impacts associated with it, including land use, radio and television interference, and visual impacts. DNRC concluded that potential land-use impacts were considered more important by residents than visual impacts. Consequently, DNRC gave more weight to reducing or avoiding potential land-use impacts and less weight to other factors, including visual impacts.

COMMENT: Mitigation for visual impacts is unnecessary if there is no significant impact (page 35, p. 6). (MPC)

RESPONSE: Although visual impacts from the proposed line will not significantly affect the aesthetics of the area for most residents, DNRC suggests the use of natural colored wood poles to reduce the contrast of the line. Use of dark brown insulators should also be considered if their cost is equivalent to that of other colors.

COMMENT: The Crossover Route does not offer greater opportunity than the Foothills Route for reduction of visual impacts. The Foothills Route impacts can be reduced by backdropping against hillsides, screening with topography, and using materials to blend in with the environment and distance. The Crossover Route offers little opportunity to reduce visual impacts because of its proximity to the highway, residences, and communities; the flat terrain it crosses eliminates potential to backdrop, screen, or blend the line with the environment. (MPC)

RESPONSE: DNRC agrees in part with this comment. The Foothills Route will allow a greater reduction in potential visual impacts than other routes for the reasons cited in the comment. However, DNRC does not consider visual impacts to weigh heavily in favor of any route for this project. The statement on page 35, paragraph 6, first sentence, of the draft EIS incorrectly implies that the Crossover Route provides the best opportunity to minimize land-use and visual impacts. The words "and visual impacts" should be deleted from that sentence to more accurately reflect DNRC's analysis of the routes as presented on previous pages and in Table 2 of the draft EIS.

SOCIAL, CULTURAL AND ECONOMIC CONCERNs:

COMMENT: Employment of local workers is at the discretion of the contractor. (MPC)

RESPONSE: DNRC agrees. Page 18, second paragraph, lines 5 and 6, states "Employment of residents from area counties would be at the discretion of the contractor building the project."

COMMENT: Work has now been deferred on the Glengarry substation until August, 1986. (MPC)

RESPONSE: Based on information available from MPC at the time of publication for the draft EIS, DNRC reported the date when construction would begin at the Glengarry substation as August, 1985.

COMMENT: Sixty-five (65) historic sites are found in the study area. (MPC)

RESPONSE: DNRC agrees. The number of historic sites reported on page 24 of the draft EIS is in error. The number of sites verified by MPC's field reconnaissance is 65, rather than 25.

COMMENT: No paleontological sites can be expected in the study area. (MPC)

RESPONSE: DNRC disagrees. The potential for paleontological sites exists wherever certain geologic formations or conditions are present. The central Montana study area contains such geologic formations. The draft EIS recognizes that no sites of this nature are known, but the statement that none can be expected is unfounded. If such sites are discovered during centerline study or construction, the site should be evaluated for significance and, if necessary, mitigation measures should be identified in cooperation with the the State Historical Preservation Officer.

COMMENT: Change the heading from "Historical and Archaeological Resources" to "Historic and Prehistoric Resources." Archaeological sites can be historic or prehistoric, but cannot be paleontological. (MPC)

RESPONSE: DNRC agrees in part. The heading used on page 24 of the draft may be technically imprecise. A more precise heading would be "Historical, Archaeological, and Paleontological Resources" because all three are covered in the section.

COMMENT: The sheepherders monument, a historical landmark in the Buffalo-Garneill area, might be disturbed if the line is built on the Foothills Route. (private landowner)

RESPONSE: The monument could be avoided by the transmission line and any access roads or other construction activities.

NEED AND ALTERNATIVES:

COMMENT: Contrary to the implication made in the statement on page 22, the third 50-kV line is not capable of supplying any of the Lewistown load from Roundup. (MPC)

RESPONSE: DNRC agrees. However, this situation does not affect the analysis of need or alternatives or the conclusions of the EIS.

COMMENT: Installing both the new line and the existing line on a single set of new poles (double circuiting) on the Railroad Route would result in a reduction in reliability and a possibility of extended outages during construction, which would be considered a major disadvantage to the people who are without power. (MPC)

RESPONSE: DNRC agrees in part. There would be some reduction in reliability with double circuiting. Certain events could cause both circuits to fail, leaving the remaining system incapable of supplying all loads. Without an analysis of the relative increase in outage frequency, it is not accurate to describe this as a major disadvantage. Similarly, outages during construction are drawbacks of double circuiting. This issue is discussed in greater detail in Chapter Three.

COMMENT: The wording "vulnerable to most outages" appearing on page 13 would be more definitive as "unacceptable during most outages". (MPC)

RESPONSE: DNRC disagrees. The existing wording adequately describes the situation.

COMMENT: Cost increases for double circuiting (including removals) may be closer to \$50,000/mile. (MPC)

RESPONSE: DNRC used MPC cost estimates in the draft EIS. Clarification of the costs of double circuiting is provided in Chapter Three.

CHAPTER FIVE FINAL CONCLUSIONS AND RECOMMENDATIONS

The draft EIS contained DNRC's preliminary conclusions, proposed recommendations to the Board, and suggested measures to reduce impacts of the project. The recommendations were presented as a means of obtaining comment on DNRC's proposed action. Comments on the draft EIS did not cause DNRC to substantially change its preliminary conclusions and recommendations. Some recommendations have been shortened and additional recommendations have been made because of comments on the draft. This chapter contains a discussion of DNRC's final conclusions and recommendations to the Board on this project.

CONCLUSIONS

Need

DNRC's conclusion on the need for this project remains as stated in the draft EIS. The central Montana electric transmission system is experiencing low voltage levels during heavy winter load periods, and with an outage to the system, problems are experienced even under relatively light load conditions. The best solution to the problem is to build a new substation near Judith Gap to tap the Broadview-Great Falls 230-kV transmission line (for voltage support) and a 100-kV transmission line between the new substation and the Glengarry substation (for reliability).

Route Comparison

Although new information changed some aspects of the analysis presented in the draft EIS, DNRC concludes that the Crossover Route offers the best balance of environmental considerations and cost. DNRC favors the Crossover Route because it would have the least cumulative environmental impact compared to the economic cost given the alternatives. Nevertheless, DNRC recognizes that a change in how impacts are perceived could make either the Railroad Route or the Foothills Route appear superior to the Crossover Route. Alignment of the line to accommodate landowners in the Foothills Route might easily drive the cost above that for locating the line in either the Crossover or Railroad routes. Similarly, if greater weight were given to concerns about scenic deterioration along the Crossover Route and Railroad Route, then the Foothills Route would be found superior. The Railroad Route could be selected if greater weight were to be placed on the use of existing corridors.

As discussed in Chapter Two, DNRC considers the Railroad Route, though favored by many area residents, to have greater cumulative impacts than the Crossover Route with little opportunity for cost-effective mitigation.

The Foothills Route would cross some areas of complex land uses and has the potential to cause significant adverse impact to agricultural operations in certain areas with few opportunities to cost-effectively mitigate impact.

The issue of weed control, although a concern on all routes, does not weigh heavily in favor of any route. DNRC's analysis indicates that there are low-cost options to control weeds on the Milwaukee right-of-way.

Undergrounding is not considered an economically viable alternative to reduce potential impacts of the project.

The project will comply with statutes and regulations administered by DHES.

Compliance with Board Standards for Electric Transmission lines

The MFSA rules adopted by the Board in December, 1984, require the Board to condition its approval of a transmission line on certain standards (ARM 36.7.3507 (2)). DNRC's analysis shows that MPC'S proposed project will comply with these standards as follows:

Noise at the edge of the right-of-way will be below the 50 decibel level. No substation will be located in residential areas, so the noise standard for substations does not apply to this project.

There is some potential for interference with communications, but there is no way of knowing whether this will occur until the facility is energized. Most possible problems could then be readily mitigated, and MPC has proposed doing so.

MPC will construct and operate the facility in accordance with the National Electric Safety Code.

The electric field at the edge of the right-of-way is substantially below the 1kV/m limit.

No airway markings by FAA are required for this facility, although consultation with State Aeronautics Division during centerline analysis will be required.

RECOMMENDATIONS

In accordance with the conclusions of the final EIS, DNRC recommends:

- 1) MPC should be permitted to build a new 230/100-kV substation near Judith Gap to tap the 230-kV system, and to build a new 100-kV transmission line between this substation and the existing Glengarry substation.
- 2) Construction of the new Judith Gap substation should be allowed to begin after the Board approves a route for the project but before final centerline approval is received by MPC. This action would help raise voltage levels on the existing transmission system as quickly as possible.
- 3) The Crossover Route should be approved by the Board.
- 4) The Board should adopt different widths for various portions of this route. The route selected by the Board should be delineated by DNRC on USGS quadrangle maps as specified in the newly adopted MFSA rules and should be attached to the Board order. The general location of this route would be as follows: Beginning at the Judith Gap substation, a route 0.5 miles wide to the Milwaukee right-of-way, a distance of about 1.2 miles. From this point north to the vicinity of Sipple, a distance of about 16 miles, a route 300 feet wide centered on the Milwaukee right-of-way. DNRC intends to have the final centerline located in the railroad right-of-way but recognizes the need for some flexibility to accommodate engineering constraints that may

require minor deviation from the right-of-way. In the area around Sipple, DNRC recommends a wider route, up to .5 mile, to allow flexibility to accommodate potential highway and railroad expansion plans. Where the route turns east south of Moore, the route width would be 1.1 miles to allow siting of the line on either the north or south side of the Crystal Lake road or on the parallel road to the north. It is DNRC's intent that the line be located within county road right-of-way and not across agricultural land in this area. Where the line turns north towards Glengarry, the route would narrow to .5 mile and then widen through the Beaver Creek drainage to 2.2 miles. A more detailed description of recommended route widths is presented in Appendix C.

- 5) The Board should place a condition on the certificate requiring MPC and DNRC to identify a centerline in the approved route, with the further condition that the Board must approve the centerline before construction begins.
- 6) The Standard Environmental Specifications for Transmission Lines 100-kV and Above as amended for this project should be adopted to mitigate potential environmental impacts including radio and television interference, cultural resource impacts, visual impacts, construction disturbance, and providing reclamation and weed control. It is further recommended that final language for these specifications be developed jointly by MPC and DNRC and submitted for Board approval at the time of route certification.
- 7) MPC and DNRC should develop a monitoring program for these specifications to be submitted for Board consideration at the time of centerline approval.

REFERENCES CITED

Department of Highways, 1984.

Personal communication between Ken Skoog, Supervisor, Location and Road Design Section, and Jim Boyer, Environmental Specialist, DNRC. August, 1984.

Gustafson, et al., 1978.

An Investigation of Electric Power Transmission and Agriculture Compatibility. Minnesota University, Minneapolis, MN.

APPENDIX A

Correspondence
Department of Highways
Department of Justice

DEPARTMENT OF HIGHWAYS



TED SCHWINDEN GOVERNOR

2701 PROSPECT

STATE OF MONTANA

HELENA, MONTANA 59601

December 31, 1984

RE: Moore to Lewistown
Transmission Line

Mr. Jim Boyer
Environmental Specialist
Department of Natural Resources
32 South Ewing
Helena, MT 59601

Dear Mr. Boyer:

The clear zone for structures of the type you are considering is required to be 30 feet. We do try to exceed this distance whenever possible to achieve the greatest distance practical. Of course we would sooner have them removed from roadway so they could pose no hazard to the motorist. However, the 40-50 feet of clear distance is acceptable to us.

Sincerely,

Stephen C. Kologi
Stephen C. Kologi, P.E., Chief
Preconstruction Bureau

SCK:GAJ:ml:5Y

cc G. L. Anders
D. W. Cromer

DEPARTMENT OF JUSTICE

HIGHWAY TRAFFIC SAFETY



TED SCHWINDEN, GOVERNOR

303 N. ROBERTS

STATE OF MONTANA

(406) 444-3412

HELENA, MONTANA 59620

January 4, 1985

Jim Boyer
Environmental Specialist
Department of Natural Resources
32 South Ewing
Helena, Montana 59601

Subject: Montana Power Company Transmission Line

Dear Mr. Boyer:

Reference is made to your December 17, 1984 letter requesting that our office provide comments regarding possible safety hazards associated with the possibility of a 100-kilovolt transmission line near U.S. 87. As a result of your request, we also had the Department of Highways review your letter. Their comments are enclosed.

Our office recommends and supports a clear roadside recovery zone of at least 30 feet from the edge of the travelway. A clear recovery zone is a relatively flat roadside area free of unprotected fixed objects and other non-traversable hazards, intended to provide an opportunity for vehicles that leave the roadway to come to a safe stop or to return to the roadway.

Since the late 1960's, a highway cross-section with 6:1 embankment slopes within a 30 foot clear zone has been generally adopted for new construction and major rural reconstruction projects. However, many existing highways have clear recovery zones with 4:1 (or less) embankment slopes or have no recovery zones at all. Recent design guidelines have suggested the need for clear recovery areas wider than 30 feet if embankment slopes are steeper than 6:1. Horizontal curves are also areas where the 30 foot recovery zone may be considered too narrow.

In summary, we recommend that any fixed object, such as 2 foot diameter power poles, be placed a minimum of 30 feet from the roadway and in the subject area it appears that this requirement may need to be extended.

Enclosed find the summary section of the document entitled, "Effectiveness of Clear Recovery Zones." This information provides further support for our conclusions and additional data regarding this subject.

Also for your information and use, enclosed is a computer printout representing reported traffic accidents along U.S. 87 in the subject area.

If we can be of further assistance to you, please do not hesitate to contact my office.

Sincerely,



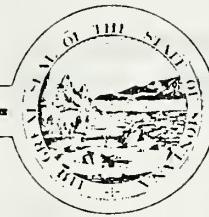
Albert E. Goke
Administrator

AEG:nh

Encls.

cc: J.R. Ricker - ROW, DOH
Distr. Engr. - Billings
Don Cromer - DOH
Greg Jackson - DOH
Proj. Analysis Bureau

DEPARTMENT OF HIGHWAYS



TED SCHWINEEN GOVERNOR

2701 PROSPECT

STATE OF MONTANA

HELENA MONTANA 59620

December 27, 1984

Mr. Harry Lauer
Highway Traffic Safety Division
Montana Justice Department
303 N. Roberts
Helena, MT. 59620

Dear Mr. Lauer:

Reference is made to the letter of December 17, 1984 which you received from the Department of Natural Resources and Conservation.

You sent a copy of the December 17th letter to us for our comments concerning a new one hundred KV transmission line that Montana Power may locate along our highway U. S. 87-Mont. 200 between Moore and Lewistown.

For your information we are presently preparing plans for a widening and plant mix surfacing of the existing highway in this area. The plans are to be ready for letting in February, 1984.

Any future occupancy of our right-of-way by Montana Power would have to be in compliance with "Right-of-Way Occupancy by Utilities", contained in the administrative rules of Montana 18.7.201 thru 18.7.241. The utility would have to make an application for a utility occupancy and location agreement to our District Engineer in Billings prior to constructing any utilities on our highway right-of-way. At such time the safety features at such location would be reviewed and considered prior to issuance of such occupancy and location agreement. One general rule that will be considered and maintained if at all reasonably possible will be the requirements of maintaining a thirty foot clear zone when measured from the outside edge of travel lane to the nearest overhead utility if such clear zone requirements can be met on our present right-of-way.

Thank you for sending the letter for comments.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. R. Ricker".

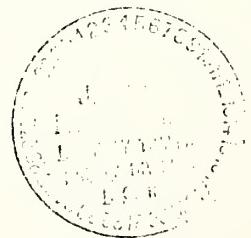
J. R. Ricker

Chief

Right-of-Way Bureau

65-JRR:GLA:mg

cc: Distr. Engr. - Billings w/attach.
Don Cromer
Proj. Analysis Bur. - w/attach.
Traffic Unit Manager



EFFECTIVENESS OF CLEAR RECOVERY ZONES

SUMMARY

The objectives of this research were to determine the safety effectiveness of clear recovery zones in reducing the number and severity of run-off-road accidents and to provide an approach for cost-effective application of clear recovery zones. The project scope included the consideration of rural two-lane highways, four-lane freeways, and four-lane divided nonfreeways. Intersections, interchange ramps, low-volume highways (ADT less than 750 vehicles per day) and highways with urban development were excluded.

Actual accident data were obtained and analyzed to compare three different roadside design policies, which have been called the 6:1 Clear Zone policy, the 4:1 Clear Zone policy, and the Nonclear Zone policy. These policies describe the roadside designs used outside of the highway shoulder; the policies vary in both embankment slopes and the presence of unprotected fixed objects. Highway sections constructed under all three roadside design policies were identified in the States of Illinois, Minnesota, and Missouri.

A field survey of a randomly selected sample of the study sections was conducted to characterize the roadside design policies in more detail and to determine whether the highway sections constructed under different policies had differences other than roadside design. This survey found that the roadway sections did represent distinct roadside design policies, but that neither the 6:1 nor the 4:1 Clear Zone policy was applied as uniformly as their names might suggest. Highway sections constructed under both policies had some foreslopes steeper than 4:1 and some unprotected fixed objects within the 30-ft clear recovery zones. The only major difference in the roadway cross-section geometrics was that 6:1 Clear Zone and 4:1 Clear Zone sections had wider shoulders than Nonclear Zone sections on two-lane highways and four-lane divided nonfreeways.

The primary measure of effectiveness for this study was the single-vehicle run-off-road accident rate. This measure of effectiveness was restricted to run-off-road accidents, because it would be questionable to presume a relationship between roadside design policy and accidents where no vehicle left the roadway. The measure of effectiveness was restricted to single-vehicle run-off-road accidents, and multiple-vehicle run-off-road accidents were excluded, both because single-vehicle run-off-road accidents are much more frequent on rural highways than multiple-vehicle run-off-road accidents, and because the severity of single-vehicle run-off-road accidents can be attributed in large degree to the roadside design. Single-vehicle run-off-road accidents involving both the outside of the roadway and the median on divided highways were considered.

Analysis of the accident data for the study sections found that roadside design policy has a statistically significant relationship to single-vehicle run-off-road accident rate for all of the highway types considered. To provide a reliable measure of the differences in accident rate between roadside design policies, the mean accident rates were adjusted to account for differences between the roadside design policies in the states where the study sections are located and the average daily traffic volumes (ADT) and shoulder widths of the study sections. The details of this adjustment are presented in Appendix D. For two-lane highways, the adjusted mean single-vehicle run-off-road accident rate was 0.254 accidents per million vehicle-miles for the 6:1 Clear Zone roadside design policy, 0.403 accidents per million vehicle-miles for the 4:1 Clear Zone policy, and 0.680 accidents per million vehicle-miles for the Nonclear Zone policy. On four-lane freeways, the mean rate was 0.182 accidents per million vehicle-miles on 6:1 Clear Zone sections and 0.289 on 4:1 Clear

Zone sections. Accident data for Nonclear Zone sections were not obtained on freeways, but an estimated single-vehicle run-off-road accident rate of 0.407 accidents per million vehicle-miles was derived from the NCHRP Report 148 roadside hazard model. On four-lane divided nonfreeways, the single-vehicle run-off-road accident rate was 0.155 accidents per million vehicle-miles on 6:1 Clear Zone sections, 0.319 accidents per million vehicle-miles on 4:1 Clear Zone sections and 0.607 accidents per million vehicle-miles on Nonclear Zone sections.

Analysis of the severity of single-vehicle run-off-road accidents found that the accident severity distribution did not vary between the roadside design policies on any of the three highway types studied. In particular, there was no shift toward less severe accidents on sections with improved roadside design policies. However, although the proportions of fatal, injury, and property-damage-only accidents did not vary between roadside design policies, the number of accidents occurring for each severity level was found to decrease as the roadside design policy improved.

The relationship between single-vehicle run-off-road accident rate and AOT was investigated within each combination of highway type and roadside design policy. For two-lane highways a statistically significant linear relationship was found between the single-vehicle run-off-road accident rate and AOT for each roadside design policy. Each of these relationships has a negative slope indicating that the run-off-road accident rate generally decreases with increasing traffic volume. No significant relationship between single-vehicle run-off-road accident rate and ADT was found for freeways or for four-lane divided nonfreeways.

The NCHRP Report 148 roadside hazard model was used to evaluate several roadside configurations that could not be examined with accident data. It was estimated that, for both two-lane highways and freeways, highway sections with a 20-ft Clear Zone roadside design policy would experience single-vehicle run-off-road accident rates approximately 10 percent higher than similar highways with a 30-ft Clear Zone roadside design policy. It was also estimated that if the 4:1 Clear Zone policy were more uniformly applied, with roadsides completely clear of unprotected fixed objects within 30 ft of the traveled way and no foreslopes steeper than 4:1, accident rate reductions of about 5 percent on freeways and of about 25 percent on two-lane highways could be obtained. Similar estimates were obtained for more uniform application of the 6:1 Clear Zone roadside design policy on freeways and on two-lane highways.

Four design examples were developed to illustrate the cost-effectiveness implications of the safety effectiveness measures developed in the study. The examples compare the average accident reduction benefits and typical construction costs for improving highways with one roadside design policy to another. The four design examples include a comparison of: Nonclear Zone and 4:1 Clear Zone roadside design policies for freeways; 4:1 Clear Zone and 6:1 Clear Zone roadside design policies for freeways; Nonclear Zone and 4:1 Clear Zone roadside design policies for two-lane highways; and, 4:1 Clear Zone and 6:1 Clear Zone roadside design policies for two-lane highways.

The results obtained from the design examples include the benefit-cost ratio for roadside design policy improvements as a function of AOT, and the "breakeven" ADT, at which the benefits and costs of the roadside design improvements are equal. Although the latter result suggests a minimum value of ADT at which roadside design policy improvements become cost-effective, a specific ADT level as a criterion on which roadside design policy can be based is not recommended because both the accident reduction benefits and construction costs may vary from site to site. Instead, a flexible approach to roadside design, based on a cost-effectiveness analysis for individual roadway sections or projects, is recommended. The benefit-cost evaluation procedure used for the design examples is suitable for this purpose. However, some highway agencies may prefer to use the recommended benefit-cost evaluation procedure to establish cost-effective roadside design policies for highways of similar highway type, traffic volume, and functional class.

APPENDIX B

Letters of Comment on Draft EIS

December 7, 1984

RECEIVED

DEC 10 1984

MONTANA DEPT. OF NATURAL
RESOURCES & CONSERVATION

Laurence Siroky
Administrator,
Department of Natural Resources and Conservation
Energy Division
32 South Ewing
Helena, Montana 59620

Dear Laurence,

Enclosed is our review of the Central Montana Draft Environmental Impact Statement. This compendium of comments was compiled by a working group from the Environmental and Engineering Departments in our Company.

While some of the comments may seem rather outspoken, we feel quite strongly that the permitting process would benefit greatly if the DNRC would apply the same rigor to their work that they demand from the Applicant.

Sincerely yours,

O. P. Rice

O. P. Rice
Manager,
Electrical Engineering

CC: Ed Bartlett
Gene Braun
Jim Falvey

OPR/mh/cmletter

MPC REVIEW OF CENTRAL MONTANA DEIS

Our review of the Department's Draft Environmental Impact Statement for the Proposed Central Montana 100-kV Transmission Project (DEIS) concludes that there are many areas of disagreement between the Department and MPC. These differences range from relatively minor differences in desired wording in the DEIS to major differences between our opinions on the siting methodology used and the accountability of the Department in that siting process.

A rough classification of our differences will be used in this review. All comments will be placed in one of the following six categories:

- I. Factual Errors and Revisions
- II. Interpretive Errors
- III. Responsibility Failures
- IV. Conclusions Requiring Further Evaluation
- V. Information Requests
- VI. Suggested Wording Changes

The first category, Factual Errors and Revisions, is the easiest to reconcile; it includes routes that are drawn incorrectly, differences in route mileages, improper figure drawings, revisions and similar discrepancies.

The second category is much broader. Under Interpretive Errors will be included several separate problems including conclusions which are not supported by the data, use of data and conclusions not relevant to line siting, and failure to discriminate between different classes of data and impacts.

The third category is Responsibility Failures. There are at least two types of failures of this kind present in the DEIS. The first is the failure to present data in a clear and focused manner so as to force the emergence of differences where they do exist. The second failure of responsibility (abdication) is the Department's apparent unwillingness to state conclusions as forcefully as the data allows; with the exception of only a few sections, there appears to be a complete aversion to state anything definite about the likelihood or significance of possible impacts. MPC feels it is the Department's responsibility to clearly describe for the Board the choices and the probable results. The DEIS includes far too many weak statements and qualifiers.

In the Conclusions Requiring Further Evaluation category, there are several conclusions that are premature, and the applicant hopes to see further discussion before they are finalized in the Certificate.

The fifth category deals with Information Requests and includes several statements made in the DEIS which the applicant has no way of evaluating without access to the referenced studies.

Finally there is a sixth category, Suggested Word Changes, which may or may not include areas of disagreement; however, it appears that the problem lies mainly in the choice of wording used in the DEIS.

I. Factual Errors and Revisions

1. Page 2

The Foothills Route as plotted in Figure 1 (attached) differs from MPC's Route in T.13N. R.16 & 17E. The DEIS does not mention a route refinement in this area and Figure 1 may be in error.

2. Page 30

Table 2 shows the Crossover Route to be approximately 35.6 miles in length. MPC's estimate shows this route to be 37.0 miles in length.

3. Page 2, Figure 1; Page 32

(East Buffalo Creek Adjustment)

The route adjustment in this area should start approximately 1-1/2 miles south of where it's shown in Figure 1. See the attached correction of Figure 1.

4. Page 30

(Table 2, Land Use Impacts)

MPC questions the differences between the Foothills Route and the Modified Foothills Route in the following categories:

- a. Dry cropland crossed:

<u>Foothills</u>	<u>Modified Foothills</u>
6.4	2.8

- b. Railroad and county road right-of-way used:

<u>Foothills</u>	<u>Modified Foothills</u>
5.9	8.9

Given the refinements DNRC has applied to this route, these numbers should be closer together.

5. Page 5

In some locations, especially where single pole structures would be used on the Department's Crossover Route, the existing distribution line (if underbuilt) would limit span lengths to 300' or less - 17.6 structures/mile.

6. Page 8

Figure 3 is misleading; MPC does not anticipate constructing a major road as the figure indicates.

7. Page 15

Cost increases for Double Circuiting (including removals) may be closer to \$50,000/mile.

8. Page 18

Employment of local workers is at the discretion of the contractor.

9. Page 20

Poles are 18 feet in diameter. How does the Department compute displacement of 0.04 AC/Mile?

10. Page 11

The third 50-kv line is not capable of supplying any of the Lewistown load from Roundup.

11. Page 7

Work has now been deferred on the Glengarry Substation until August, 1986.

12. Page 29

Radio and television interference are not the same on all routes. The use of CB radios is not affected on the Foothills Route as much as along the county roads. Residents of Garneill, Straw and Sipple will have a much greater interference problem.

13. Sixty-five (65) historic sites are found in the study area.

14. No paleontological sites can be expected in the study area.

II. Interpretive Errors

Mistakes in this category are in a wide range and could be further subdivided. Some of these mistakes stem from drawing conclusions which are unsupported by the data, some are due to the decision to treat essentially different data categories as if they were alike (lumping apples and oranges) and some are the result of a failure to discriminate between the crucial data and the irrelevant.

1. Confusion between evaluation of impacts and reporting of landowner concerns appears in many places. The last sentence on Page 21 is only the worst of several examples.

However, area landowners, especially those bordering National Forest Lands along the foothills of the Big Snowy Mountains, expressed concern over increased trespass problems from hunters using new access roads across their property.

This sentence is the longer of two sentences under the heading Recreation Impacts. It is a landowner concern, not an impact to recreation (further it shows no awareness of Company policy about road closures and no acknowledgement that the closest proposed route is at least two miles from the forest boundary; in addition, if there is an impact, it is to landowners, not recreation). These remarks are not intended to downgrade the value of landowner concerns. However, it is the Department staff that is responsible for impact assessment, not the landowner.

2. Mixing of land ownership and land use as if they were the same thing. Land ownership does not imply a particular land use nor does use imply a particular ownership. There is good reason why these two generally are not mixed. Mixing only confuses an otherwise clear distinction (see Table 2, last five categories or Page 33, Second paragraph "...private agricultural land..."

Because of this mixing, the very crucial questions of how much cultivated land is crossed and how serious are the impacts can not be addressed. If impacts to cultivated land are tabulated, Table 2 and Table 3 will look quite different.

3. Mixing the discussion of the need for weed control for all routes and the discussion of the existing weed problem on the abandoned Milwaukee Railroad right-of-way (page 20) is, at best, confusing. The two should be kept separate to avoid the confusion. With respect to the general concern with the impacts of construction on weed control, the fears are overstated. However, it is the use of the weed control discussion with respect to the Milwaukee right-of-way that is the most confusing.

The discussion of weed control on the Milwaukee right-of-way has little to do with line location unless there is substantial complementarity between weed control activities and transmission line construction activities. The DEIS does not make such a case; rather two statements are made:

The abandoned Milwaukee Road right-of-way is a source of weeds, with leafy spurge, spotted knapweed and Canadian thistle all growing there. Control of weeds on the railroad would benefit farmers (Page 20)

· · · · ·

- Would reduce area-wide weed problem if weed problems in Milwaukee Road right-of-way are addressed (Table 3, Page 31).

Although undoubtedly both are true, they have nothing to do with the siting of a transmission line, unless a ransom package is being suggested; if so, why not say it! (Is this a desirable part of good resource planning?)

4. With respect to differences in construction costs, there is a failure to frame these differences in a focused manner. First, in Table 2, costs are total project cost figures even though the table purports to be discussing only factors relevant to route comparison (Table 2, Summary of Length, Cost and Environmental Resource Concerns for Possible Route). The comparative figures on Line 2 for the Foothills Route and the Crossover Route should be \$1.9 and \$2.2 million respectively, not \$6.1 and \$6.4 million. Likewise in Table 3, the Foothills Route should show a cost advantage of \$300,000.

5. Page's 15-16

Major disadvantages of Double Circuiting also includes reduction in reliability and possible extended outages during construction, which would be considered a major disadvantage to the people who are without power.

6. Page 19

In areas where farming has encroached upon unused road easements, the structures will impact farming. This could lead to weed problems in areas around poles that are unfillable.

7. Page 21

Access gates can be removed or locked after construction so that trespass is minimized.

8. Page 22

A 4% side slope criterion for roads may be too restrictive.
(6" in 12')

9. Page 28

All routes do not have the same RIV impacts. March's report indicates MPC route (Foothills Route) is preferred. It is also the least costly in terms of constructin. No cost estimate has been prepared for mitigating interference problems.

Page's 32 & 33

In order to be consistent, the Department should point out the access problems along the Milwaukee Railroad; it appears there are 15 separate locations where the railroad right-of-way crosses the Ross Fork or its tributaries with no bridge. These are spaced apart such that access from Highway 191 or county roads to the west (through cultivated grounds) will be required to avoid or minimize construction activities near the creek.

Page 33

Access to the Foothills Route via roads intersecting proposed line locations is better than for the Crossover, which has fewer intersecting roads. Access is not continuous along the Milwaukee Railroad because bridges have been removed.

10. Page 33

Also structures would be located adjacent to the Ross Fork for most of the distance that the creek parallels the railroad.

11. Page 33

As stated earlier, weeds could become a problem in cultivated areas that became un tillable for large equipment.

12. Page 33

If farming is suspended in the presently encroached county right-of-way, the 30- to 40-foot wide strip could become a weed area.

13. Weed control problems along the Milwaukee Railroad may be compounded by the close proximity to the Ross Fork which could limit herbicide use (the Department of Health and Environmental Sciences may restrict spraying activities).

14. Page 20

Much of the area's right-of-way for roads may be producing crops. To locate the transmission facility where it does not affect crop production may pose a safety hazard to vehicular traffic.

15. Page 20

The County Weed Control Act should already cover control of noxious weeds and we see no reason for MPC to be held responsible for the correction of an existing problem.

16. Page 23

Earthquake potential is not an important factor in any route determination. The chances of occurrence are too rare to be of any significance.

17. Page 33

MPC doesn't agree that greater soil and vegetation disturbance could occur along the Foothills Route because there may be less traffic on each individual segment than on the Crossover Route. It appears that the Department is of the opinion that county road rights-of-way are not utilized.

18. Page 31

The DEIS states that the main problem for geology/soil is erosion and compaction. It then identifies building in flood plains as a big contributor to the problem. In their final assessment, the Department picks a route along the Ross Fork Creek, with no mention of erosion and compaction as a disadvantage.

19. Page's 30 and 32

The impact analysis presented in Table 2 does not agree with MPC's water quality and aquatic biota impact analysis for the Foothills and Crossover Routes (MPC's preferred and second choice alternatives respectively). The railroad right-of-way portion of the Crossover Route has a low impact. The corresponding portion of the Foothills Route has a negligible impact.

20. Page 24

There is a low probability of increased access and subsequent vandalism to cultural resource sites because of MPC policy about road closures (see comment 7).

21. Page 33, p. 2

The statement "...landowners did not consider potential visual impacts an important determinant for route location..." is inconsistent with the statement on Page 28, p. 6, "all persons preferred routes away from them"

22. Page 37, p. 5

Environmental considerations and public concerns do not support the Crossover Route over the Foothills Route. MPC ranked the concerns in Table 2 page 30, (excluding the specific agricultural land use categories), and found the Crossover Route is second to either Foothills Routes.

If all persons prefer to have it away from them (Page 28, p.6) and the Crossover Route is visible from most residences, highway, and communities (Table 2, Page 30), then public concern does not support the Crossover Route as being superior to the Foothills route.

23. Page 38, p. 4

Mitigation is unnecessary if there is no significant impact (Page 35, p. 6).

24. Page 3, p. 6

The Crossover route does not offer greater opportunity than the Foothills route for mitigation of visual impacts. The Foothills Route impacts can be mitigated by backdropping against hillsides, screening by topography, and reducing visibility by using materials to blend in with the environment and distance. The Crossover Route offers little opportunity to reduce visual impacts because of its proximity to the highway, residences and communities; the flat terrain it crosses eliminates potential to backdrop, screen or blend the line in with the environment.

25. Page 38

DNRC states that methods exist to mitigate or eliminate impacts to area streams and soil by:

1. Using existing access roads.
2. Installing culverts or bridges on streams or using fords if they exist and have less impact.
3. Avoiding stream fords.
4. Locate poles and construction activities far away from streams to prevent sedimentation.
5. Preventing loose fill from entering streams.
6. Prohibiting off-road travel when soil moisture is high; implementing measures to reduce and/or restore compacted areas.
7. Preventing or limiting construction activities in stream beds or flood plains.

These seven prohibitions are the best possible argument against using the railroad right-of-way along the Ross Fork.

III. Responsibility Failures

The Applicant views the Department's role in the EIS process as that of providing expert staff for the Board. As such, the staff should formulate the important questions and gather the relevant evidence to provide answers for the Board. It is crucial that the staff have a clear picture of what those questions are and what data are relevant. The staff must then selectively distill things down to portions that can be digested by the Board.

The Central Montana DEIS not only fails to distill and simplify issues, it adds confusion to some that are, at the outset, relatively simple. Several examples of the DEIS adding to the confusion have already been noted. Two are worth repeating. The first is the mixing of land use and land ownership under the heading "Land Use Impacts" (Table 2, Page 30). This mixing of categories runs counter to accepted practice and leaves the staff unable to answer the most basic question: How much cultivated land is impacted by the Crossover Route? The second example repeated here is the mixing of landowner concerns and impact analysis. This combination leaves us with a mixture containing unknown proportions of popularity contest and impact assessment.

A less excusable shirking of responsibility is the failure of the staff to reach conclusions which could give guidance to the Board as to the probability and significance of impacts that would necessarily accompany each alternative. There are only a few areas where the staff gives the Board much to work with: The DEIS does say the project is needed, and the wildlife and fisheries sections describe impacts in terms of significance and likelihood. There are a couple other areas where a description of the obvious leads to definite statements. The rest of the impact analysis is more often a list of events that could or might happen, with no assessment of how likely or how damaging these events would be. Such statements can be of little help to a citizen board such as the Board of Natural Resources and Conservation.

IV. Conclusions Requiring Further Evaluation

1. Page 36

(Route Widths Considered)

MPC is opposed to narrowing route widths on any of the alternatives or Department adjustments. MPC sees no need for or benefit from reducing route widths. If route widths are reduced, the Department should provide specific centerline data to reinforce such a route. By reducing route widths, MPC will lose needed flexibility in dealing with landowner concerns and their neighbors' concerns. Also, the Department adjustments are not in the location MPC understood them to be. As an example, the East Buffalo Creek adjustment as shown in Figure 1 starts on the ridge just south of East Buffalo Creek. Starting the adjustment here will not satisfy this landowner's concerns. The starting point for this adjustment should be approximately 1-1/2 miles south of the point shown in Figure 1.

2. Page 35

The Weed Control Act gives all responsibility to the county to act accordingly. There is no reason for MPC to become involved in sharing costs before construction.

V. Information Requests

1. Page 13

MPC would like to see the Department's evaluation of combustion turbines.

2. Page 15

MPC would like to see the Department's examination of energy conservation.

3. Page 30

Where is the ** located which is footnoted?

4. Page 30 What impact is there on right-of-way which is being farmed, i.e. along country roads?

5. Page 31

The route appears to go through Garneill and Straw with all residences affected - what happened to Sipple?

6. Page 33

What measures can be taken to reduce transporting of weeds?

7. Page 38

Because of the numerous stream crossings that result from paralleling a creek on the Crossover Route, how can stream problems be minimized?

8. Please provide us the record of public input. Specifically, a breakdown of public input by number of individuals, by route on which individuals reside, by individuals ranking of alternative routes and the technique used to solicit the Record of Public Input.

VI. Suggested Word Changes

1. Page 5

Guy wires are required whenever the line makes an angle to change direction. The word "corner" implies a 90 degree angle.

2. Page 13

"Vulnerable to most outages" would be more definitive as "unacceptable during most outages"

3. Page 7

The fact that noise levels change with weather conditions should be specified. The DEIS implies that a noise would be present all the time. Rain in an open field has a noise level of 42 dBA, which is much greater than the 25 dBA mentioned.

4. Page 24

Change the heading from "Historical and Archaeological Resources" to "Historic and Prehistoric Resources." Archaeological sites can be historic or prehistoric, but cannot be paleontological.

CONCLUDING REMARKS

This review includes a substantial number of points of difference between the Applicant and the Department. Because of the limited time for editorial review there is some duplication of comments, particularly in Category II. Likewise, there has not been sufficient time to articulate several additional doubts held by the Applicant.

In particular, we fear the Department does not fully appreciate the Environmental problems of constructing the line on the Milwaukee Railroad right-of-way along the Ross Fork (This was our original second choice in the application). Additionally, we feel that the Department has not fully investigated the weed control problems and possible future agricultural use of the Milwaukee right-of-way and we question the weighting that appears to have been put on public acceptance conclusions, particularly when those conclusions are not rigorously drawn in carefully designed studies.

Finally, we believe that there should be some parallel between the rigor of the standards the Department imposes on the Applicant through the Department's Rules and Regulation and the standards of research and workmanship the Department places on its own publications.

Moore, Montana
December 6, 1984

Mr. Lawrence Siroky, administrator
D. A. R. & C. Energy Division
32 South Ewing
Helena, Montana 59623

Re: Central Montana Project

Dear Sir:

I attended the meeting in Moore concerning the routing of the proposed Montana Power Company 100-KV transmission line from a point south of Judith Gap, Montana to Glengarry.

Here are my comments:

1. As a landowner and a concerned citizen I want to recommend to you that the most common sense, practical and economical way is to run the line down, or near, the abandoned old Milwaukee railroad right of way, starting where it would meet the right of way at Judith Gap and continuing all the way to Glengarry. This would require very few poles in any of the fields compared to the foothills route or any part thereof.
2. In regard to erosion, weed control and other problems, they are already there and new ones would not be created.
3. tiny portion of the foothills route would require roads and access roads to be built all of the way with bridges to be built, leveling to be done and many problems coming along.
4. It seems your people are telling us that from a safety standpoint this is not the way. Sometimes it seems we want to be over-protective in trying to protect one self from oneself.
5. The Moore Airport has been abandoned for over 20 years, there can be no problem there.
6. Over 90% of the people in attendance at the Moore meeting strongly favor the railroad right-of-way. This should be considered.
7. It seems the time involved in this process is absolutely ridiculous, the date of application being June, 1983, and as stated at this meeting, it will be in the spring of 1986, in all probability, before construction could possibly begin! If nothing else, it will double the cost.

Sincerely,

Jack Hannah
Jack Hannah

Dec. 5, 1984

Laurence Siroky, Administrator
re: Central Montana Project
Department of Natural Resources and Conservation
Energy Division
32 South Ewing
Helena, Mt. 59620

We wish to begin by commending the department of Natural Resources for a very thorough study of the proposed Central Montana 100-KV Transmission Project. They were most willing to listen to each of our concerns and then to put together a well prepared impact statement.

We concur with DNRC's recommended route, the Crossover route, for the following reasons:

#1--We have several one-tower moveable irrigation pivots that MPC's preferred route, the Foothills Route, would go over. The danger of electrocution and inconvenience in moving these pivots from one field to another is of great concern of ours for our children, their children and the hired help who might work with us on our place. The Crossover Route would reduce this problem.

#2--We at present time have a gasline, missile cables, a highway, the Burlington Northern Railroad, the Milwaukee Railroad bed, power lines, and telephone lines that cross our land -- all in different right-of-ways, criss-crossing our land. We are not agreeable to another line or whatever going across our land in a different place which the Foothills Route does. The Crossover route would go along the railroad which is already there with it's own road bed.

#3--Weed control is a very expensive item to us each year. We already have leafy spurge which we attempt to control each year, but it becomes very difficult to make a dent in it when our land is adjacent to the Milwaukee RR who at the present does nothing. For this reason we are willing to negotiate with MPC on some type of weed cost-control program. It would be much better than what we now have. (refer to page 20, paragraph 6; page 33, paragraph 8; page 35, paragraph 3 and 6; page 36, paragraph 3; page 37, paragraph 5)

#4--The Milwaukee RR land is essentially useless because of the steriliants that have already been used on the land. We feel that putting the transmission line on this land would be a good use for the land.

#5--The Milwaukee RR right-of-way has received strong public support as has been stated on page 29 of the DEIS report under the paragraph headed "Route Comparisons" and on page 35, paragraph 6.

One of our major concerns of this proposed 100-KV line, no matter where it is located, is radio reception. We at present have a base as well as several mobile FM Business

Ban radios that we use in our business. Because our land is located in three counties the radios make it possible to call for "Help", call for information or direction saving us "down-time" and fuel. Because of our investment, we request that the DNRC and MPC make sure they can correct any interference that would cause a problem with the Business Ban radios. (refer to page 29, paragraph 2; page 38, paragraph 5; page 20, paragraph 8).

The disadvantages of the Foothills Route are very important to note, they include as stated in table 3, page 31:

A--"low amount of new access roads", whenever a vehicle drives over land, the land suffers. The lands productivity is decreased for several years.

B--"highest potential for landscape alteration and erosion", we lose enough topsoil each year to erosion, it is not desirable to lose more.

C--"high potential to spread weeds to a new area", because of the high cost of controlling weeds this is a major concern, especially leafy spurge and spotted knapweed. Good grassed pasture provide our livelihood.

D--"strong opposition voiced by people attending DNRC public meetings", the people who must live daily with this new line should be listened to.

We also ask that DNRC in their final EIS further address the ownership of the Milwaukee right-of-way. So that they can eliminate one of the concerns to the Crossover Route. (refer to page 19, paragraph 4 and page 35, paragraph 4)

In conclusion, we ask the DNRC and MPC to accept the Crossover Route over the other routes for the above reasons. And to further study the effect on business ban radios, the ownership of the Milwaukee right-of-way and investigation of possible cooperative cost-sharing agreements to reduce the possible weed control problem. (At present no one has contacted us concerning the weed issue)

Thank you!

Trudi Bishop Peterson
Trudi Bishop Peterson)

Dean A. Peterson

Dean A. Peterson

E. L. Peterson Ranch, Inc.
Box 8 Judith Gap, MT 59453
374-2244 374-2301

Three Bar Ranch INC.
Buffalo, MT. 59418
374-2324

12/5/84

Three Bar Ranch Inc. would like to go on record as opposing the foothills route. This route would cut through our ranch along the foothills of the snowy mountains. Road cutting would be required for pole construction due to steep terrain. This construction would result in soil erosion and increased weed problems. We are already fighting spurge and knapweed problems. We're afraid construction traffic would transport more weeds along access roads creating new weed problems.

We're also concerned the foothills route would have adverse effect on wildlife. Right-of-way roads would cross elk wintering range and increase trespass into an undisturbed roadless area. The addition of a road would allow more people, and more left open gates.

We also have a guest cabin, barns and other out buildings within 3/4 mile of the

foothills route. A transmission line within sight of the cabin would not only have adverse effect on the aesthetic qualities of this mountainous area, but would greatly reduce the market value of our land if it were sold as a guest ranch.

The Shepherders monument, a historical landmark in the Buffalo-Garnett area, might also be disturbed as a result of construction of the foothills route.

Three Bar Ranch Inc. has ^{permitted} right-of-ways for missile lines, gas lines and county roads. We believe Montana Power has a much better alternative in the crossover route or the railroad route. We believe these two routes would minimize the spread of weeds, reduce soil erosion, require less maintenance and in the long run, be cheaper and more acceptable to us as ranchers and electricity consumers.

Respectfully,

Stephen Page
Elizabeth Buck Page.
Margaret E. Buck
and family

71/2 ore, 7 North
Nov. 30, 1984

Mr. Laurence Shirley
Helena, Mont

Dear Sir:

After reading the literature on the proposed Central Montana 100-KV transmission project, we, the undersigned, are sending you our sketch of the proposed railroad route from Ripple to the Glenarry sub-station. We hope you will consider it as an alternative to your crossover route.

This route would follow country roads in its entirety and would bypass all homes in the area and would go by only one set of buildings that have been abandoned for 40 years. The only part of this route that could possibly be considered a hazard would be the old Moore Landsgy strip that has been abandoned for many years and all that remains is the old barn used for storage. This portion could easily be bypassed by using the brown broken line on our sketch. The added advantage of this route is that it is all level farming country.

The crossover route on your map goes thru sections 28 and 21 thru agricultural land and over a very steep hill where an access road would have to be built in order to build and maintain a transmission line. The terrain here could create a serious erosion problem.

If you feel that our proposal has any merit, I, John Janicek would be happy to have you contact me and I would show your representative the whole route we are describing here as well as the crossover route which we feel has definite disadvantages.

Yours truly,

John V. Janicek

Donald L. G. Shirley

James W. Janicek

RECEIVED

DEC 03 1984

MONTANA DEPT. OF NATURAL RESOURCES

Dear Sir's

I'm opposed! to the Crossover route, I would like to ~~see~~ the railroad route all the way (the green route).

12/5/84

Frank E. Bass
Sta RT.
Moore, MT, 59464

APPENDIX C
Recommended Route Width for Crossover Route

DNRC recommends a variable width route as follows:

Beginning at the proposed Judith Gap substation located in the northwest 1/4 of section 35, T11N, R15E, a route one mile in width centered on a line drawn from the substation to a point .25 mile north of the corner of sections 25, 26, 35, and 36, T11N, R15E. It is DNRC's intent that within this route existing transmission line and railroad right-of-way should be followed to the extent practical.

From the point .25 mile north of the corner of sections 25, 26, 35, and 36, T11N, R15E, the route width would narrow to 300 feet in width, centered on the Milwaukee right-of-way. The route would follow the right-of-way to a point where the right-of-way crosses the line dividing sections 13 and 24, T13N, R15E, where the route would again widen. From the point where the right-of-way crosses section 13 and 24, T13N, R15E, to the right-of-way crossing of the Crystal Lake Road on the line between section 1, T13N, R15E, and section 36, T14N, R15E, the route would encompass an area bounded by a line 150 feet west of the center of the Milwaukee right-of-way and 200 feet east of the center of Highway 191. This wider route is recommended to allow flexibility to avoid houses and accommodate potential railroad and highway expansion in the Sipple area.

About 1 mile north of Sipple, the route turns east for a distance of approximately 8 miles. A route 1.1 miles wide is recommended to allow final line location on either side of the Crystal Lake Road or the county road 1 mile to the north. It is DNRC's intention that the cropland outside of the county road right-of-way and the residences on the east end of the Crystal Lake Road be avoided.

The southern boundary of this route would be a line from a point 150 feet west of the Milwaukee right-of-way and 0.05 mile south of the line section dividing section 1, T13N, R15E, and section 36, T14N, R15E. The line would cross .05 mile south of the northern boundaries of sections 1 through 6, T13N, R16E, to a point .05 mile south and .1 east of the corner of sections 32 and 33, T14N, R17E, and sections 4 and 5, T13N, R17E.

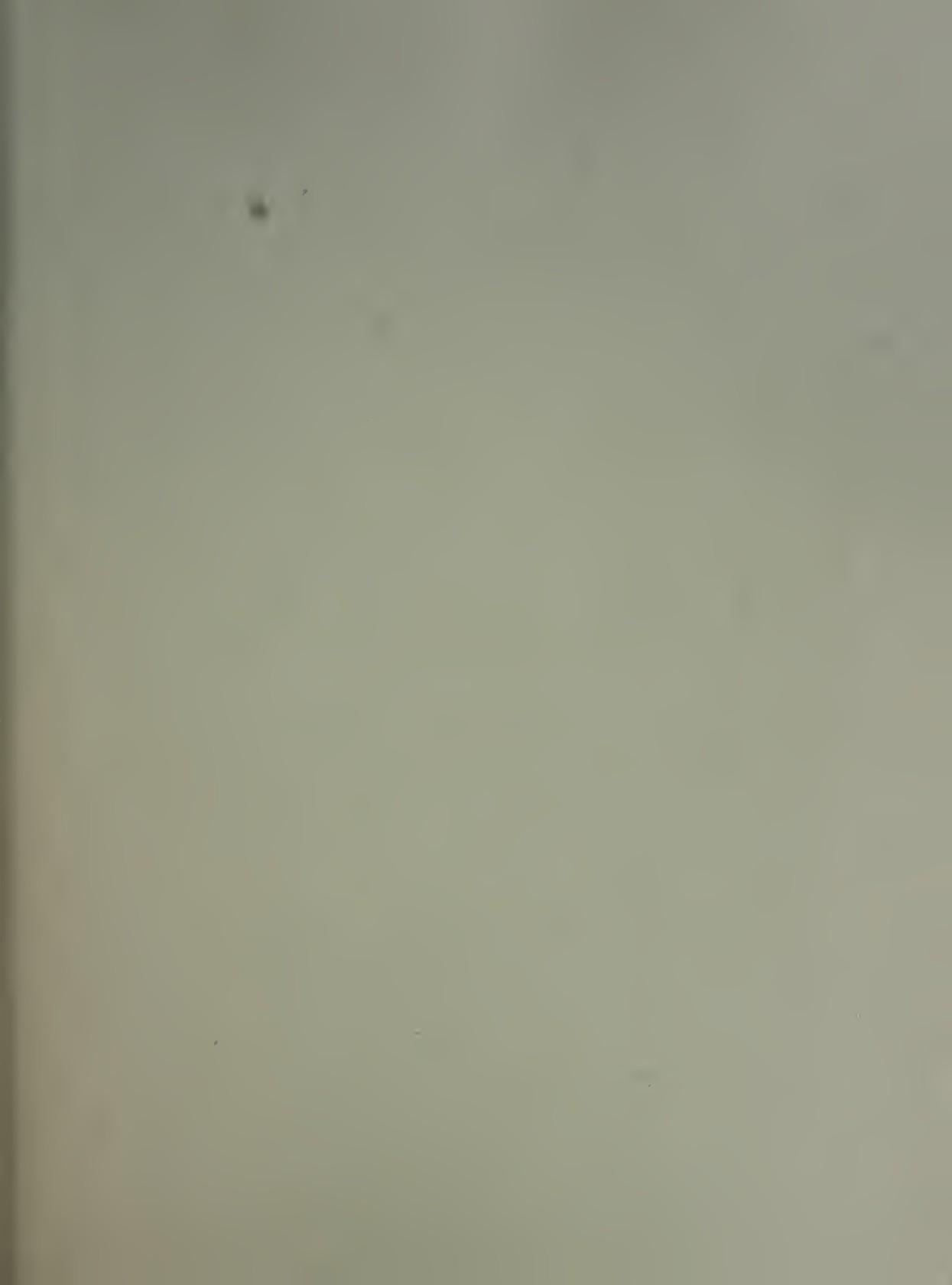
The northern boundary of this portion of the route would extend from a point 150 feet west of the Milwaukee right-of-way and .05 mile north of the line dividing sections 25 and 36, T14N, R15E, east along a straight line to a point .1 mile north and .1 mile west of the corner of sections 29, 30, 31, and 32, T14N, R17E.

In the vicinity of Rock Creek and Little Rock Creek, 6 miles south and 2-3 miles west of Glengarry, the route turns north and narrows to about 1/2 mile wide. The western boundary is as follows: from a point .1 mile north and .1 mile west of the corner of sections 29, 30, 31, and 32, T14N, R17E, a line drawn north for .8 miles (a point .1 mile west and .1 mile south of the corner of sections 19, 20, 29, and 30, T14N, R17E), then east 1 mile (a point .1 mile west and .1 mile south of the corner of sections 20, 21, 28, 29, T14N, R17E), and then north 2 miles (a point .1 mile west and .1 mile south of the corner of sections 8, 9, 16, and 17, T14N, R17E).

The eastern boundary is as follows: from a point .05 mile south and .1 mile east of the corner of section 32 and 33, T14N, R17E, and sections 4 and 5, T13N, R17E, a line drawn north 1 mile (a point .05 mile south and .1 mile east of corner of sections 28, 29, 32, and 33, T14N, R17E), then east .5 mile (a point .05 mile south and .4 mile west of corner of section 27, 28, 33, and 34, T14N, R17E), the north 2 miles (a point .05 mile south and .4 mile west of the corner of sections 15, 16, 21, and 22, T14N, R17E), and then diagonally across section 16 to the corner of sections 9, 10, 15, and 16, T14N, R17E.

Through the Beaver Creek drainage, a route 2.2 miles wide is recommended. The boundaries are as follows: the western and northern boundary beginning at that point .1 mile west and .1 mile south of the corner of sections 8, 9, 16, and 17, T14N, R17E, a straight line north 4.5 miles to a point .1 mile west and .5 mile north of the corner of sections 20, 21, 28, and 29, T15N, R17E, then east 2.7 miles to a point .6 mile east and .5 mile north of the corner of sections 22, 23, 26, and 27, T15N, R17E.

The eastern boundary is as follows: from a point on the corner of sections 9, 10, 15, and 16, T14N, R17E, a line drawn east for 1.1 miles to a point .1 mile east of the corner of sections 10, 11, 14, 15, T14N, R17E, then north 3.0 miles to a point .1 mile east of the corner of sections 26, 27, 34, and 35, T15N, R17E, then east .5 mile to the point .1 mile east of the midpoint of the line dividing sections 26 and 35, T15N, R17E, then north 1.5 miles to a point .6 mile east and .5 mile north of the corner of sections 22, 23, 26, and 27, T15N, R17E.





MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
Energy Division
Capitol Station
Helena, Montana 59620

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